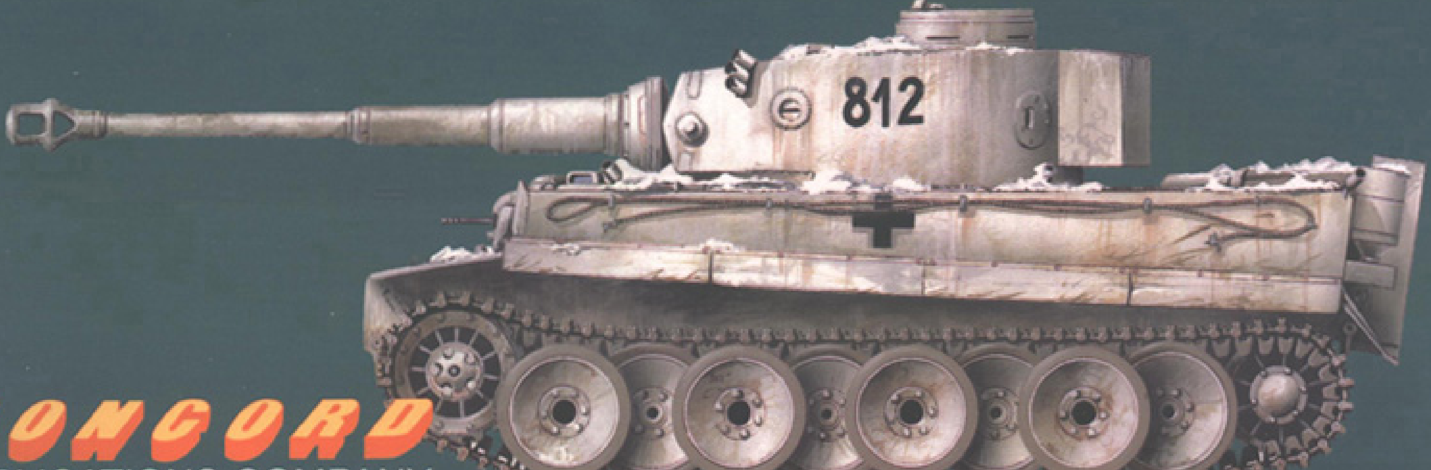
ARMOR AT WAR SERIES

7018

PANZERTRUPPEN AT WAR

Robert Michulec



CONCORD
PUBLICATIONS COMPANY

7018

PANZERTRUPPEN AT WAR

Text by Robert Michulec
Color plates by Arkadiusz Wróbel

方阵网图书馆藏书

阅读须知：

1、请您在阅读完本书后24小时内自觉删除本软件包。私自保留本软件包而引起的相关责任将由您个人承担。
2、如果您觉得本书的内容精彩，请您购买本书支持作者。国外书籍可以通过本站服务区联系代购事宜。
3、如果您的软件包来源于方阵网以外的地方，这是一个不合法的版本。请您到方阵网直接获取。

CONCORD
PUBLICATIONS COMPANY

Copyright © 1998
by CONCORD PUBLICATIONS CO.
603-609 Castle Peak Road
Kong Nam Industrial Building
10/F, B1, Tsuen Wan
New Territories, Hong Kong

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying or otherwise, without the prior written permission of Concord Publications Co.

We welcome authors who can help expand our range of books. If you would like to submit material, please feel free to contact us.

We are always on the look-out for new, unpublished photos for this series. If you have photos or slides or information you feel may be useful to future volumes, please send them to us for possible future publication. Full photo credits will be given upon publication.

ISBN 962-361-626-0
printed in Hong Kong

INTRODUCTION

There was a considerable delay in the creation of the German armored forces. A possible reason for this is that the officer cadre of the German Imperial Army, which was led by old-fashioned generals, had problems interpreting the new face of modern war, which they encountered for the first time during the Great War. While the Allies put over twelve hundred tanks into service in 1918 and planned a great armored offensive for the next year, the German generals considered these "tin cans" to be barely more than toys, whose use was improper according to such serious people as the generals of the Great Staff. They still believed in the power of ideology, which they felt made soldiers armed with guns more prone to fight for fatherland and emperor. So, when the German front collapsed under the tracks of allied tanks, the generals had difficulty understanding why. General Ludendorff could only say that 8 August 1918, the day when British tanks broke the German front line, was a "black day for the German Army." The same general, however, had no time or will to equip this army earlier with large numbers of tanks, when all control of military matters had been in his hands.

Following the Great War the tank, like the airplane (especially bomber aircraft), was a military reality that could not be ignored, despite the point of view of the aging generals. The re-building of the German Army, which began in the late 1920s, provided an opportunity to change the look of the land forces, and this was slowly accomplished during the 1930s. The Army was quite mobile in those days due to the Versailles Treaty, which compelled the Germans to maintain a few cavalry divisions. Though this made the German Army weaker, it also made it fast and maneuverable and helped to create in the early 1930s a mobile core of the new Army - the Panzerwaffe. The exchange of horses for tanks was no easy matter, but after Hitler's election as chancellor, this process hastened. In this period, between the beginning of the Peace Negotiations in early 1932 and the rise of the Nazis in 1933, the Germans began experimenting with the first, small "armored" units and preparing for production of their very first tank - the Pz.Kpfw. I.

No one in military or business circles had any experience in the armored warfare industry, so the Germans had to learn from the allied achievements of the Great War and their own mistakes. As a result, the Pz.Kpfw. I was not a good vehicle for combat (though it was well-suited for combat training). It was too light for service, had a weak suspension and was fitted with an odd armament composed of only two machine guns. It could not be properly used on the battlefield (where it had no business being), but the war erupted two or three years too early, so the Germans were unable to replace the Pz.Kpfw. I with standard battle tanks like the Pz.Kpfw. III.

The Pz.Kpfw. I was important for the Panzerwaffe, however, because it helped to create modern armored units in a short period of time and was used to train a large number of tank crews, who later proved to be better prepared for combat than their French, English or Soviet counterparts. From this point of view, the Pz.Kpfw. I played a major role in the history of the Panzerwaffe, probably even a more important one than the Pz.Kpfw. IV.

The history of this tank began in 1932, when the decision was made to begin the production of a light tank. The tank was developed in 1933, and production started in February 1934 and continued until June 1937. During this period four factories gave to the army almost 1,700 pieces of the Pz.Kpfw. I combat model, which were used in all the armored units throughout the second half of the 1930s. They were employed in combat against Poland and the West, with the last of them seeing combat service as late as 1941 in Africa and the Soviet Union.

Meanwhile, in May 1936 production began on the Pz.Kpfw. II, a stronger and better armed tank than the Pz.Kpfw. I. This vehicle was a standard light tank, which (thanks to its armament) could be used on the battlefield, including battles against enemy armor. The Pz.Kpfw. II was also the first German tank that was well constructed and prepared for heavy service under field conditions, but only after 1936, when modifications of the Pz.Kpfw. II's chassis and transmission were introduced. Despite its weaknesses and obsolescence, the Pz.Kpfw. II was still produced in the second half of 1942, with the final pieces out of almost 1,990 Pz.Kpfw. IIs being finished in November. Its successors, even those in the pre-production series, never materialized as mass-produced vehicles, and the Panzerwaffe was devoid of the light reconnaissance tank in the second half of the war.

Up until 1940 the Pz.Kpfw. II — despite its light weight and armament — had been the . . . main combat tank (!) of the Panzerwaffe, but it was replaced in 1940 by the

Pz.Kpfw. III medium tank. In that year the Pz.Kpfw. III became the standard tank of the Panzer divisions, which shows just how ill-prepared the Germans were for war, and how its main striking force, which frightened Europe almost with the same power as the Luftwaffe, was actually very weak and far from being combat ready.

Work on the Pz.Kpfw. III began in 1936 and in 1937 the first 38 pieces of this tank were built, in no fewer than three quite different models, which were more like pre-series test versions than actual battle tanks. In 1938 the factories produced 32 Pz.Kpfw. IIIs and in early 1939 around 200 more were built, including over 100 pieces of the first mass-produced model — the Ausf. E. In 1940 all the factories produced over 800 pieces of this tank, and in 1941 this number was doubled. But the largest number of Pz.Kpfw. IIIs – 2,501 — was produced in 1942, at a time when this model of tank was completely obsolete. It was during this year that the crews of the Panzer divisions met the M4 Sherman in Africa and was still fighting against the T-34 in the Soviet Union. Even with its long-barreled gun, the KwK 39 L/60, the Pz.Kpfw. III was not a good enough weapon to deal with such tanks, and its crews did not enjoy the confidence they would have if they had been sure of possessing superior armor. It should be noted that despite these problems the Pz.Kpfw. III was probably the best German tank during the first part of the war. It was easy to service and drive, had a very good chassis and transmission, and was quite comfortable for the crew; even the radio-operator and driver had escape hatches. There were no problems with repairs, and its cross-country capabilities were rather good. The quality of this tank was confirmed by Allied and Soviet tank crews, which usually preferred driving the Pz.Kpfw. III over any other tank of the Panzerwaffe, except the later series of the Pz.Kpfw. V.

Very similar to the Pz.Kpfw. III was the Pz.Kpfw. IV, which was the main German medium tank throughout the war. The production of this tank began very late in the autumn of 1937. Its construction s very similar to the Pz.Kpfw. III, which was developed at almost the same time. So, the hull, superstructure and turret of the Pz.Kpfw. IV were constructed in the same way as in the Pz.Kpfw. III, but were a little bigger, of course. The Pz.Kpfw. IV even had the same engine. Nevertheless, its weight was heavier than that of the Pz.Kpfw. III by 2.5 tons. But the engines were the most troublesome for the German armor industry. Though the weight of the Pz.Kpfw. IV increased to 25 tons, its engine had only 50 HP more than the early versions. It was the same with the Pz.Kpfw. III, which started its service at 16 tons with a 250 HP engine and ended it at almost 23 tons with a 300 HP engine. It was too small in the case of the Pz.Kpfw. IV, too, and in the second part of the war the tank was more troublesome than the earlier models in the beginning of the war. It's enough to mention here that the Pz.Kpfw. IV had the same speed in country terrain as the heavy tanks had, and its cross-country capabilities were quite similar to heavy tanks.

The Pz.Kpfw. IV was quite a good battle tank. Its construction was simple, the suspension was good, repairs of its engine were easy, and the servicing of the tank was no problem for the crew. Although the Pz.Kpfw. IV was successful in combat, even it could not secure complete supremacy over enemy tanks. But after the exchange of its gun and the addition of some millimeters of armor, the Pz.Kpfw. IV was productively used against M4 Sherman and T-34 tanks in the battles of 1943. It was in that year that the Pz.Kpfw. IV was produced in a much larger quantity than previously, which enabled the Germans to make wider use of it on the front line for the first time. While in 1941 just over 450 (!) Pz.Kpfw. IVs were built, and around 1,000 in 1942, in 1943 its production increased to over 3,000 pieces. A similar number was produced the next year. During the whole war about 8,400 Pz.Kpfw. IV tanks were produced, as well as a large number of other combat vehicles constructed on the Pz.Kpfw. IV chassis, like the StuG IV (over 1,100 pieces), the Sf.Pz.Kpfw. IV (over 300 pieces), the Jäg.Pz.Kpfw. IV (over 1,900 pieces), and the Fla.Pz.Kpfw. IV (240 pieces). This means that the Pz.Kpfw. IV was produced in larger numbers than any other German tank.

The successor to the Pz.Kpfw. IV was the Pz.Kpfw. V, which was developed in 1942 and began service in the middle of 1943. The Pz.Kpfw. V "Panther" was the type of tank that could be described as a vehicle ahead of its time. Big, heavy, well armored with cleverly composed plates, very well armed, and equipped with a powerful engine and good suspension, it provided the Panzer crews with superiority over all enemy tanks almost until the end of the war. The Pz.Kpfw. V weighed around 45 tons, which made it more similar to the heavy tanks than the medium tanks of the day when it entered into field service. On the other hand, however, it was almost the standard weight of the early post-war tanks, which were armed in nearly the same manner as the Panther.

There were many problems with the Pz.Kpfw. V when it was put into service in 1943. The engine did not work correctly, but the chassis was improved before combat service started. All the weaknesses of the Pz.Kpfw. V, which resulted from the speedy rate of construction of the Panthers, had been eliminated by the end of 1943, and from that time the Pz.Kpfw. V tank dominated the battlegrounds all around Europe.

Almost 6,000 Panthers were produced, most of them – 3,749 vehicles — during 1944, when the factories introduced a modified series with a heater system in the combat compartment, flame-trap exhaust mufflers and infra-red equipment, which made it the most modern tank in the world. It was not until almost the end of the 1940s that better tanks than the Pz.Kpfw. V — the M48 and the T-54— appeared.

The most famous tank of the Panzerwaffe was the Pz.Kpfw. VI "Tiger", which was the most expensive tank of its time. While the Pz.Kpfw. IV cost a little over 100,000 RM, the Pz.Kpfw. VI cost around 800,000 RM, so the Germans had to produce seven fewer tanks for each Tiger. But this difference was not important on the battlefield, where heavy battalions lost far fewer tanks than the standard companies in the divisions. The Pz.Kpfw. VI crews also destroyed many more enemy tanks than did the Pz.Kpfw. IV crews, which made the loss:success ratio much higher than the production ratio of the Pz.Kpfw. VI and Pz.Kpfw. IV tanks.

The Tiger was introduced in 1942 following three years of work. It was quite a strange tank — partly modern, partly obsolete. For example, the Tiger was fashioned in a modern way, i.e., with one turret containing a heavy gun, but on the other hand it featured some construction ideas that were more typical of the late 1930s. The most noteworthy were the hull and the superstructure, which were built of 80-100mm plates composed into a simple box. This design had been good enough for 1940 or even 1941, when work on the VK3601(H) was finalized, but it was inadequate for 1942 and the following couple of years of combat.

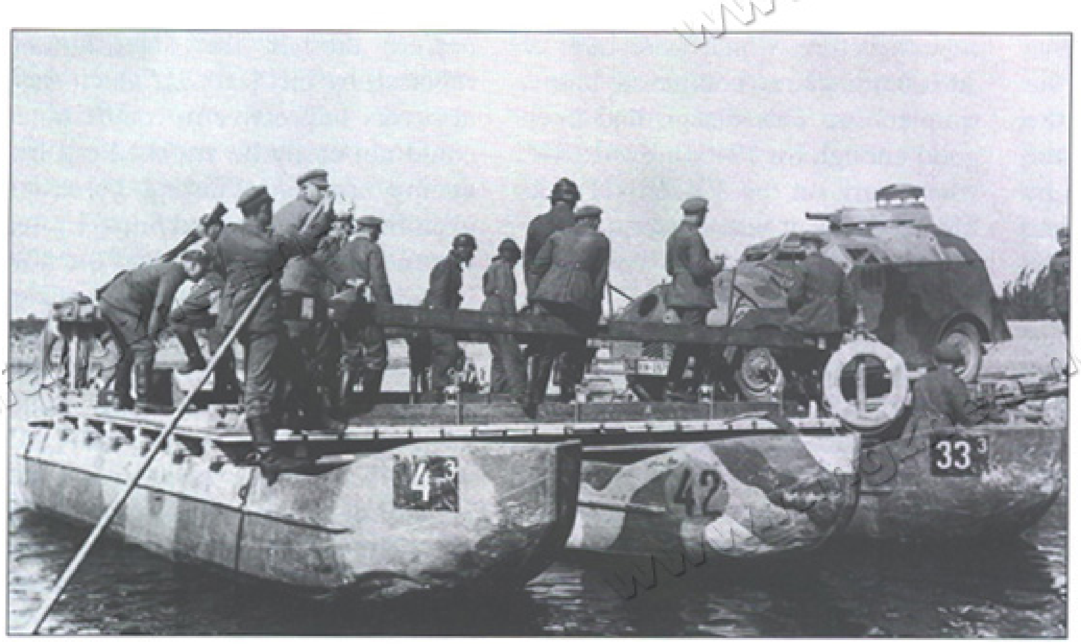
This was changed in 1943, when work on the Tiger II started. The construction of this new Tiger's hull and superstructure were designed into a Panther-like shape, but the plates were thicker than in Pz.Kpfw. V. However, problems with the power-plant immediately appeared. The great tank, armed with the powerful 8.8cm gun and protected with 100-180mm armor, could fight any enemy, but suffered many problems while traveling across even slightly difficult terrain. The same engine that propelled the Tiger without major difficulty could not provide the same capability for the mastodon that was 10 tons heavier. Therefore, it was best for this tank to engage in combat on tough terrain or on good roads. The independent moves made by Tiger II crews across soft fields when the enemy forced a fight usually resulted in a lot of trouble; the Pz.Kpfw. VIB would sink and the engine or transmission would quickly sustain damage. Due to a lack of power, the tank was heavy to drive and movement across fields was slow and difficult, which was very dangerous for its crews due to the complete air superiority of the enemy and the frequent lack of cover and support from other combat vehicles.

Despite this and other minor weaknesses, there was no better tank than the Tiger anywhere in the world in 1943. Later its supremacy was overcome by new American armor piercing ammunition and 90mm guns and the heavy Soviet vehicles armed with 122mm guns, like the IS-2 or ISU-122. In the same period, though, the Tiger I was replaced by the Tiger II, which was also very impressive in combat and could not easily be knocked out by enemy armored fighting vehicles, even the heavily armed ones. Up to the end of the war the Allies did not introduce any new armored vehicle that could deal with the Pz.Kpfw. VIB without difficulty. It is interesting to note that only about 1,800 Tiger tanks were produced, which was not a large quantity. Nevertheless, the Tiger, especially the first model, was probably the most popular and most legendary tank of World War Two.

During WWII the Germans produced 25,250 pieces of different combat tanks, far fewer than the Americans, whose M4 alone was produced in nearly twice as large a number, and the Soviets, who did the same with their T-34 tank. But in the second half of the war, after the Germans had replaced their old tanks, the Panzerwaffe possessed technical superiority on all fronts. Thanks to this they won dozens of tank battles and inflicted heavy losses on the enemy, which proved that the German concept of the battle tank was correct. After the early years of indolence where tanks were concerned, the Germans finally took over the leading position in the armor business.

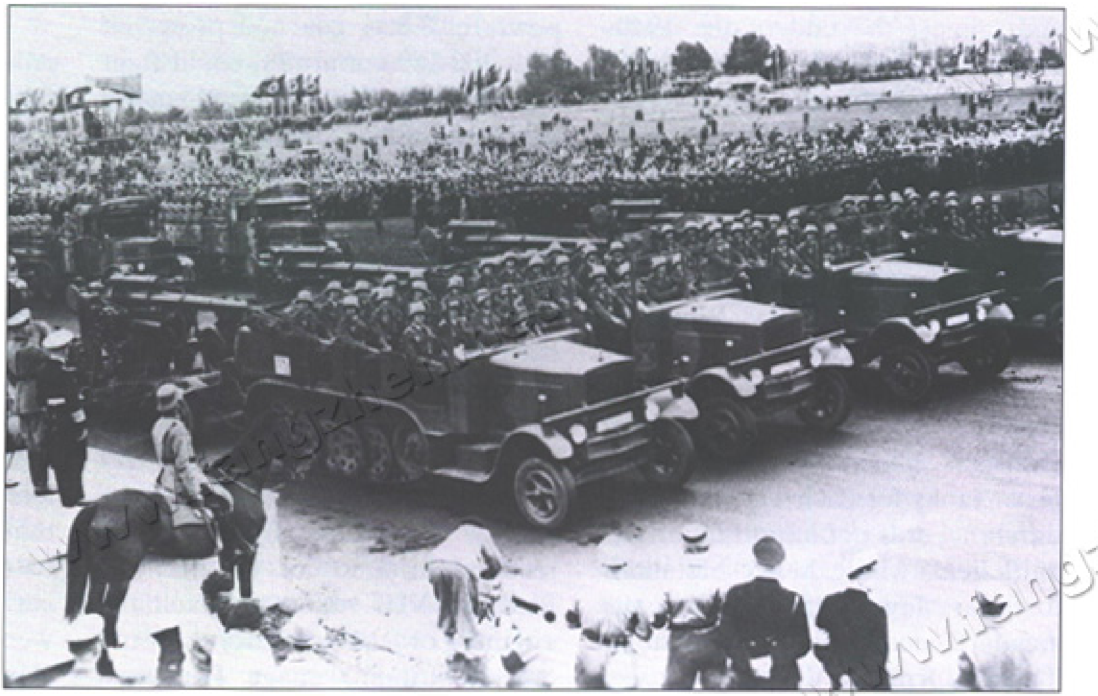
All photos used to illustrate this book were taken from the files of the Polish Army Military Archives, the Central Photo Archive and private collections.

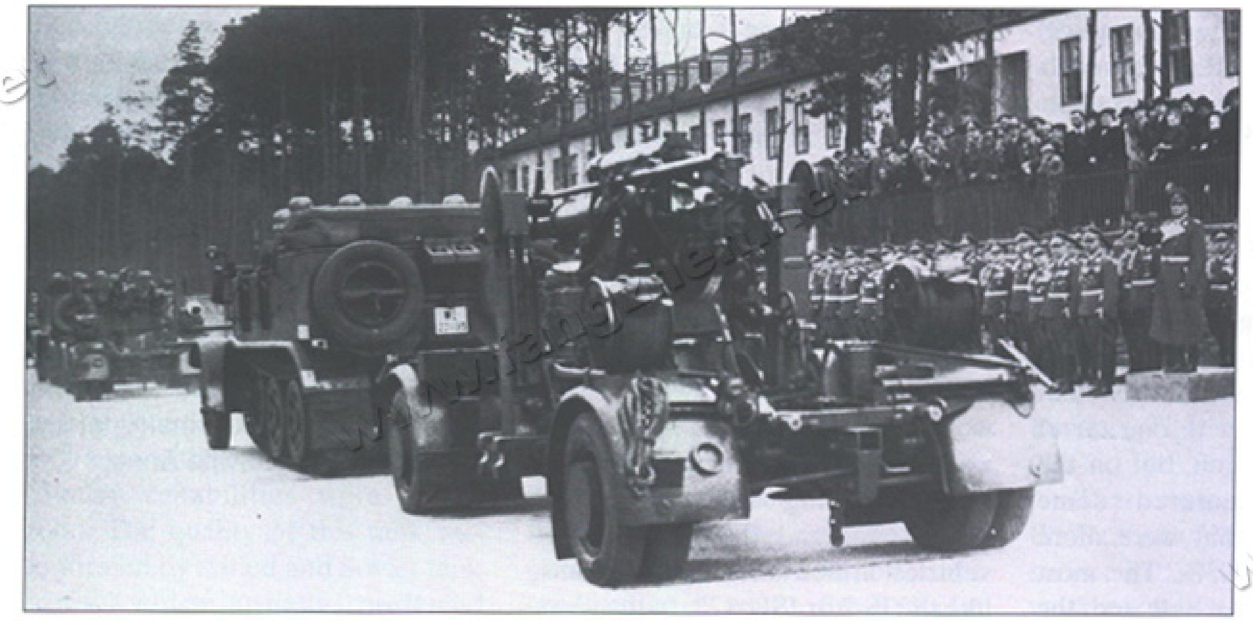
I would like to express my thanks to Tomasz Kopański for his support in this work and the crews of the archival institutions, as well. I would also like to take the opportunity to greet Tomek's family, his son Marek and wife Anna.



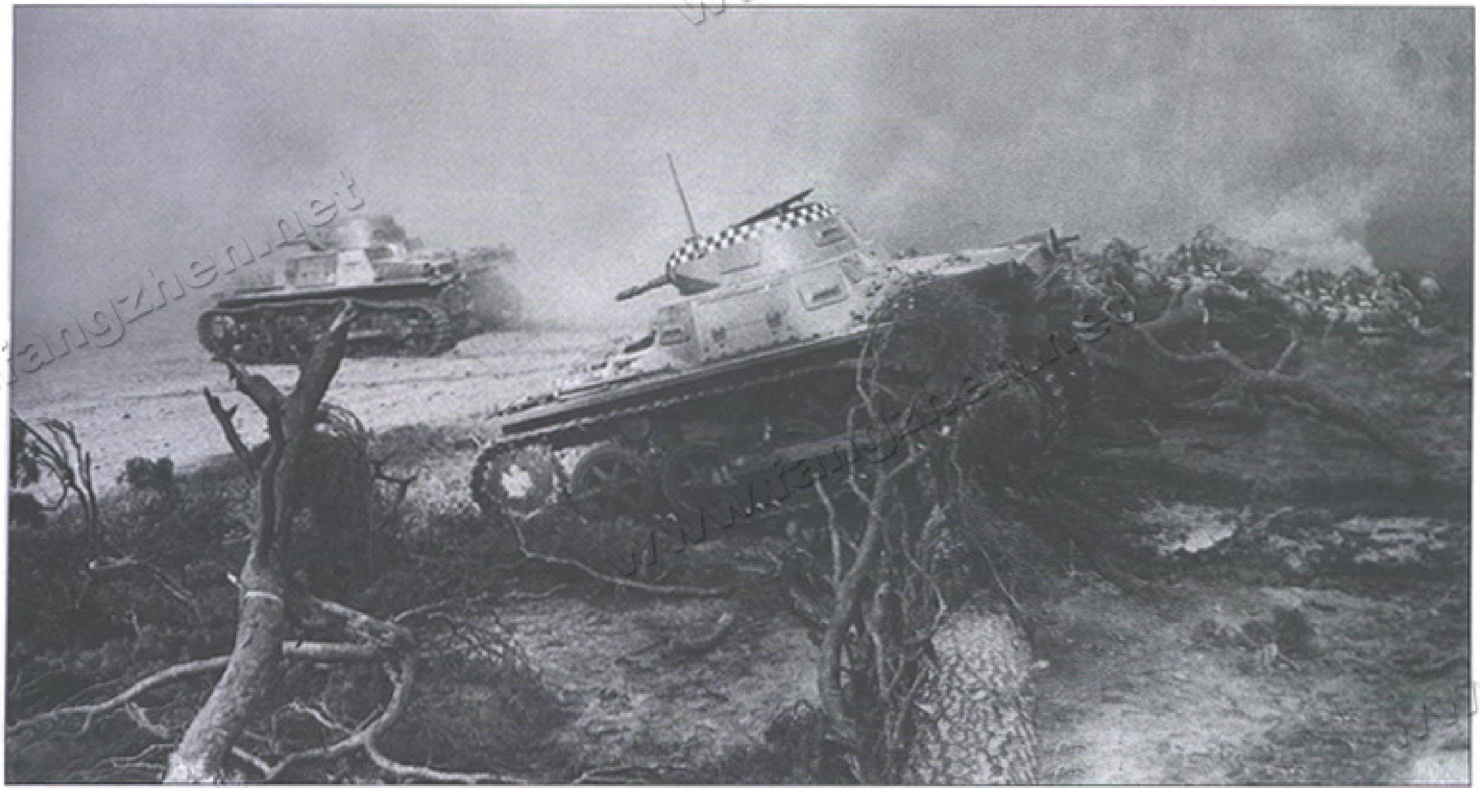
The earliest member of the future Panzerwaffe — the Adler reconnaissance vehicle Panzerwagenattrappe, built on the chassis of the standard Adler "Favorit" car. The vehicle, which had a crew of four, was constructed of pieces of sheet metal fixed to the chassis of a cross-country car. This Panzerwagenattrappe is about to be ferried by a pontoon transport. Of special interest is the three-color camouflage composed of sand, green and brown. This color combination was typical for the armored vehicles of many countries in Europe (e.g., France, Poland and Czechoslovakia) in the 1930s. Note the markings (unit emblem and tactical markings) of this Adler and the part of the license plate with Reichswehr code letters. This photo was taken during an autumn maneuver that was viewed by Hindenburg in the 1930s in Frankfurt am Oder.

A parade organized for propaganda purposes, patterned after one of the famous military rallies held in spacious stadiums, especially those in Nuremberg. Note the three-color camouflage clearly visible on the half-track prime movers belonging to the Luftwaffe and the heavy tractors in the background. The colors were applied in vertical stripes with wavy borders. The lightest color is brown, the darkest is dark green, while the third color is dark gray. Beginning in 1935, a solid gray paint scheme (sometimes with an added pattern in brown) was applied to all the surfaces on German vehicles. Note also the additional license plate painted in the Reichswehr style on the side of the nearest Sd.Kfz. 7. Later this style was abandoned and two to four license plates were used, all of them on the front and rear of the vehicles. All four Sd.Kfz. 7s are the early version, a small number of which were built between 1933 and 1934. They were later replaced by a newer model that featured longer tracks.

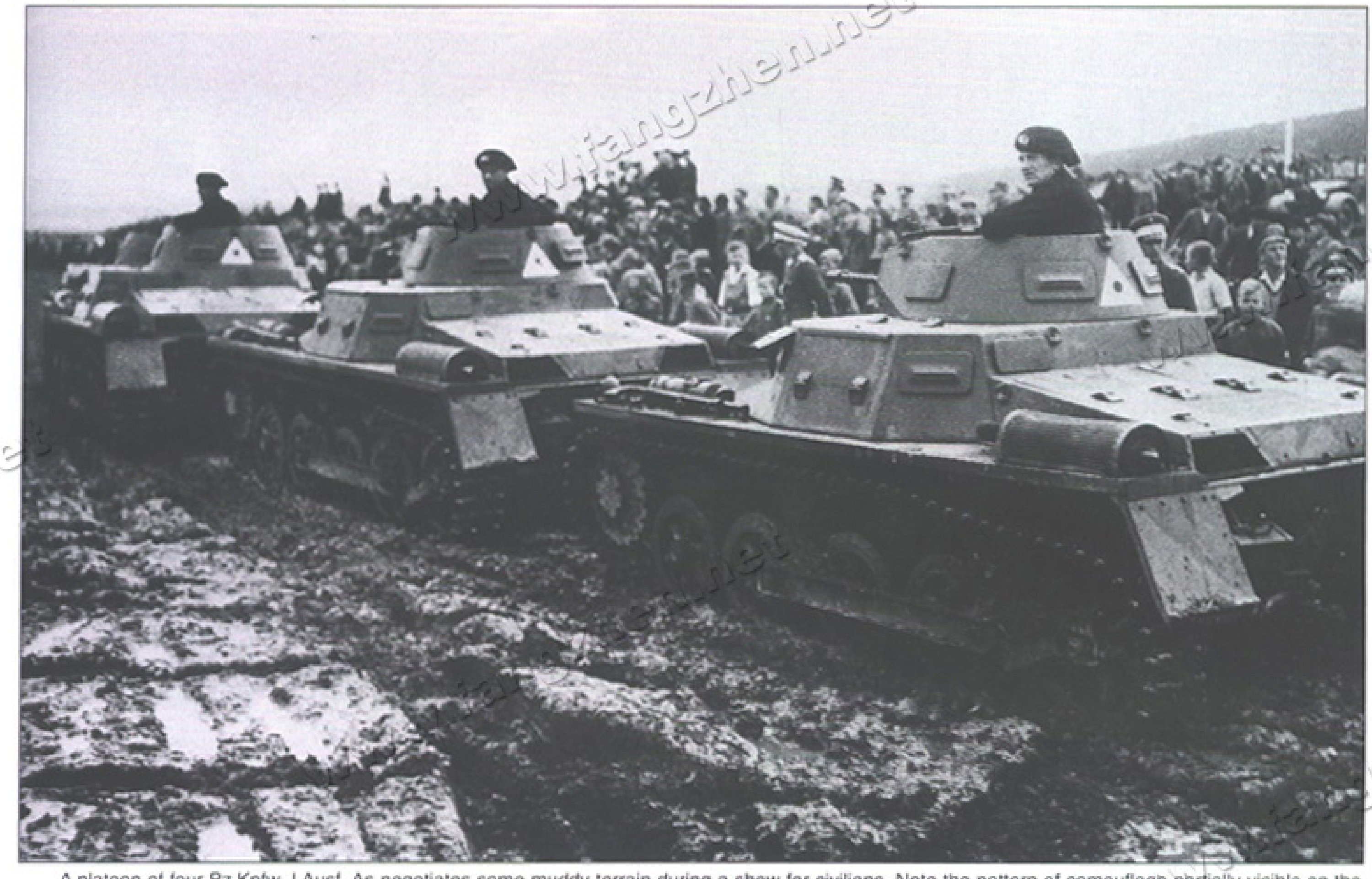




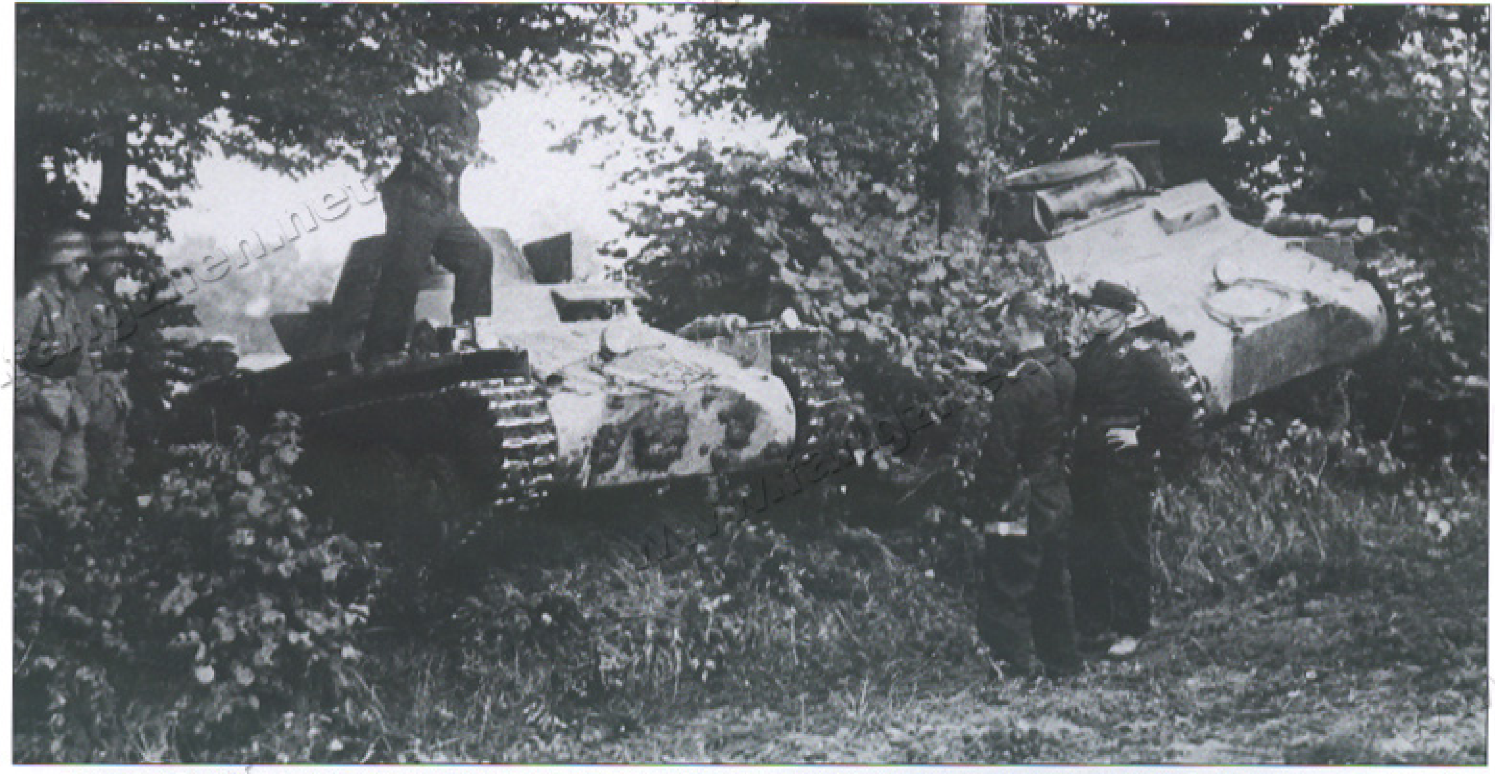
A similar view showing an early Sd.Kfz. 7 armed with a 8.8cm Flak 36 anti-aircraft gun, seen from the rear in this photo. Note the white letter "B" painted on the gun just below the barrel. The license plate of the prime mover reads "WL 221135".



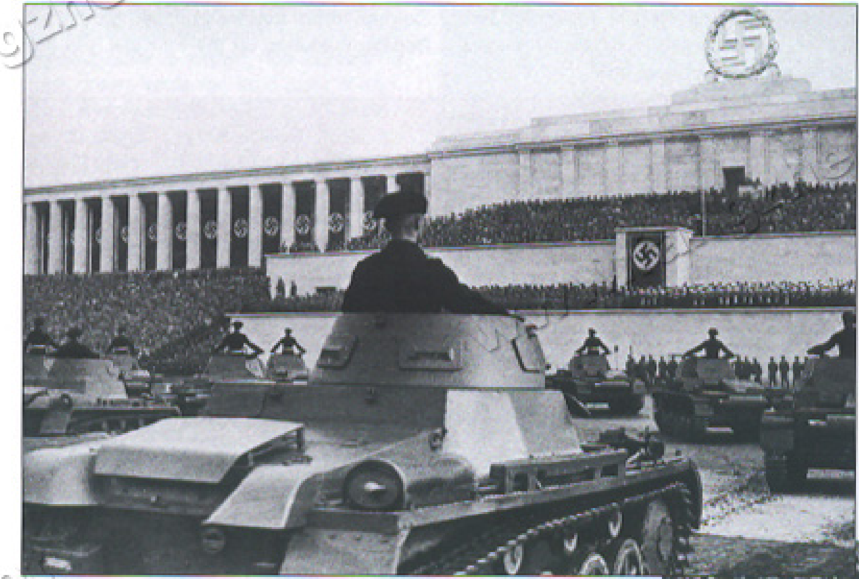
Two Pz.Kpfw. I Ausf. As maneuver during a training exercise. The Pz.Kpfw. I was quite fast and maneuverable, but its chassis and engine were too weak. Note the black and white checkerboard pattern on the top of the turret. The pattern, which has been painted around the turret, can also be seen on the mantlet. The Germans used this sort of marking to indicate the command tanks for a short period in the first half of the 1930s. Note that the tank in the background does not feature such markings. This fact would seem to dispel the theory held by some scholars of German armor that the checkerboard is an identification marking for "enemy" forces during field maneuvers, as it has been sometimes claimed. Note the illegible markings on the Pz.Kpfw. I in the background that have been painted just under the turret on the rear plate of the superstructure.



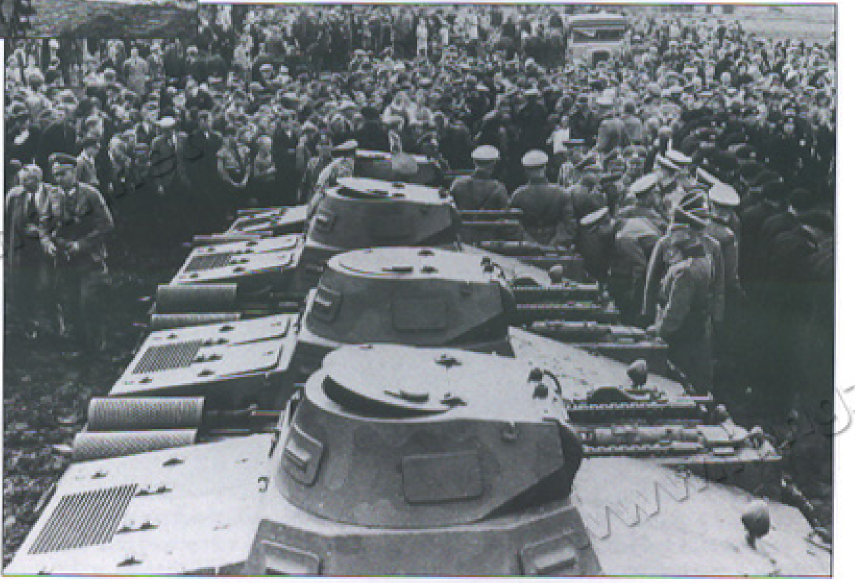
A platoon of four Pz.Kpfw. I Ausf. As negotiates some muddy terrain during a show for civilians. Note the pattern of camouflage partially visible on the two nearest tanks. Of special interest are the tactical markings composed of a white triangle with a black circle inside painted on the rear of the turrets. The Pz.Kpfw. I was a simple tank that suffered many problems due to its chassis, which prevented it from covering difficult terrain at combat speed during battle.



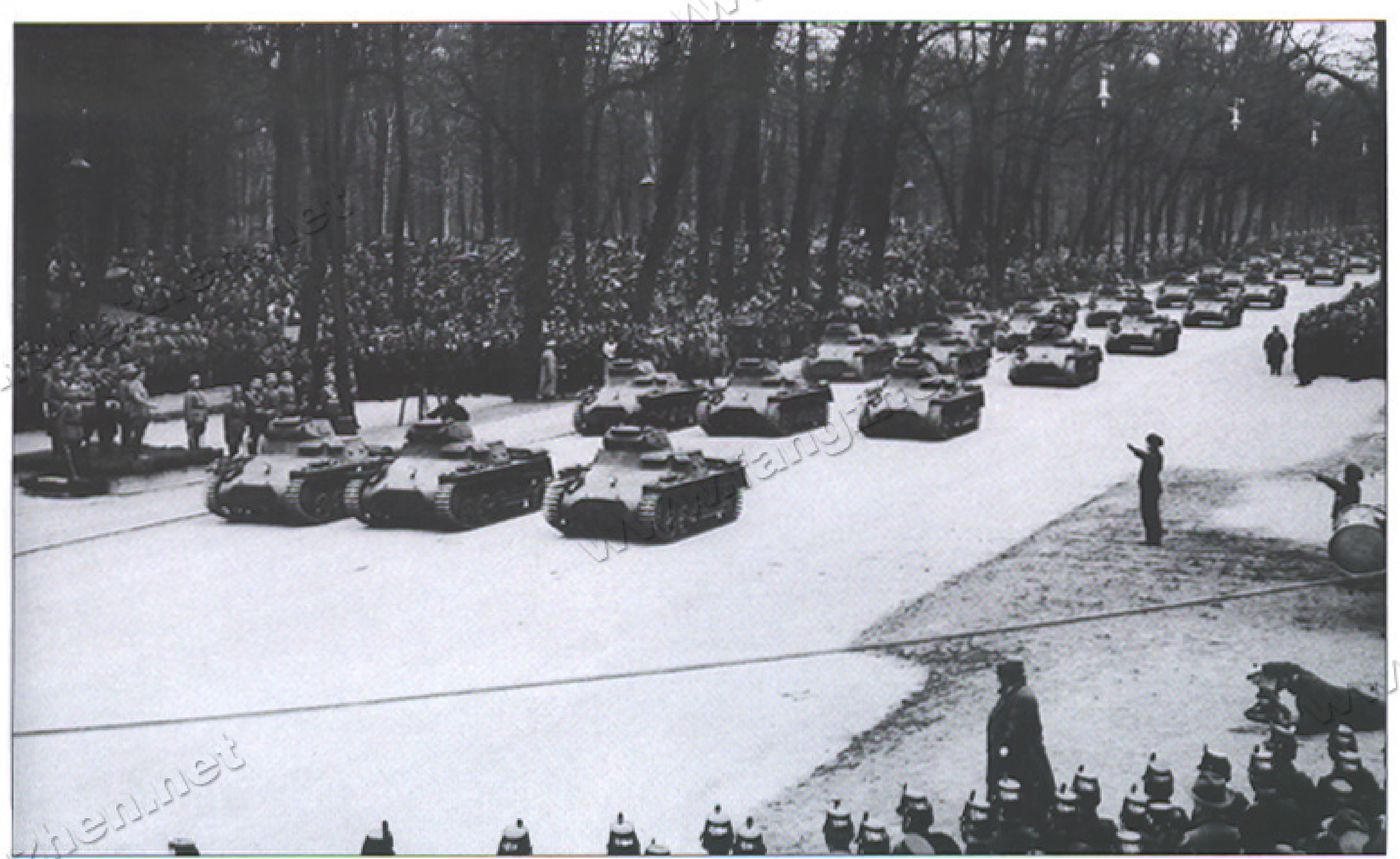
This pair of Pz.Kpfw. I Ausf. As was photographed among some trees near a road during autumn maneuvers in 1936. Pz.Kpfw. Is were the first of the Panzerwaffe's tanks seen in public during the German Army's maneuvers in 1934, which is when the Pz.Kpfw. I entered service. It was Germany's first real tank, which may explain why it was not a very good one. Nevertheless, it was mass produced for training tank units for combat.



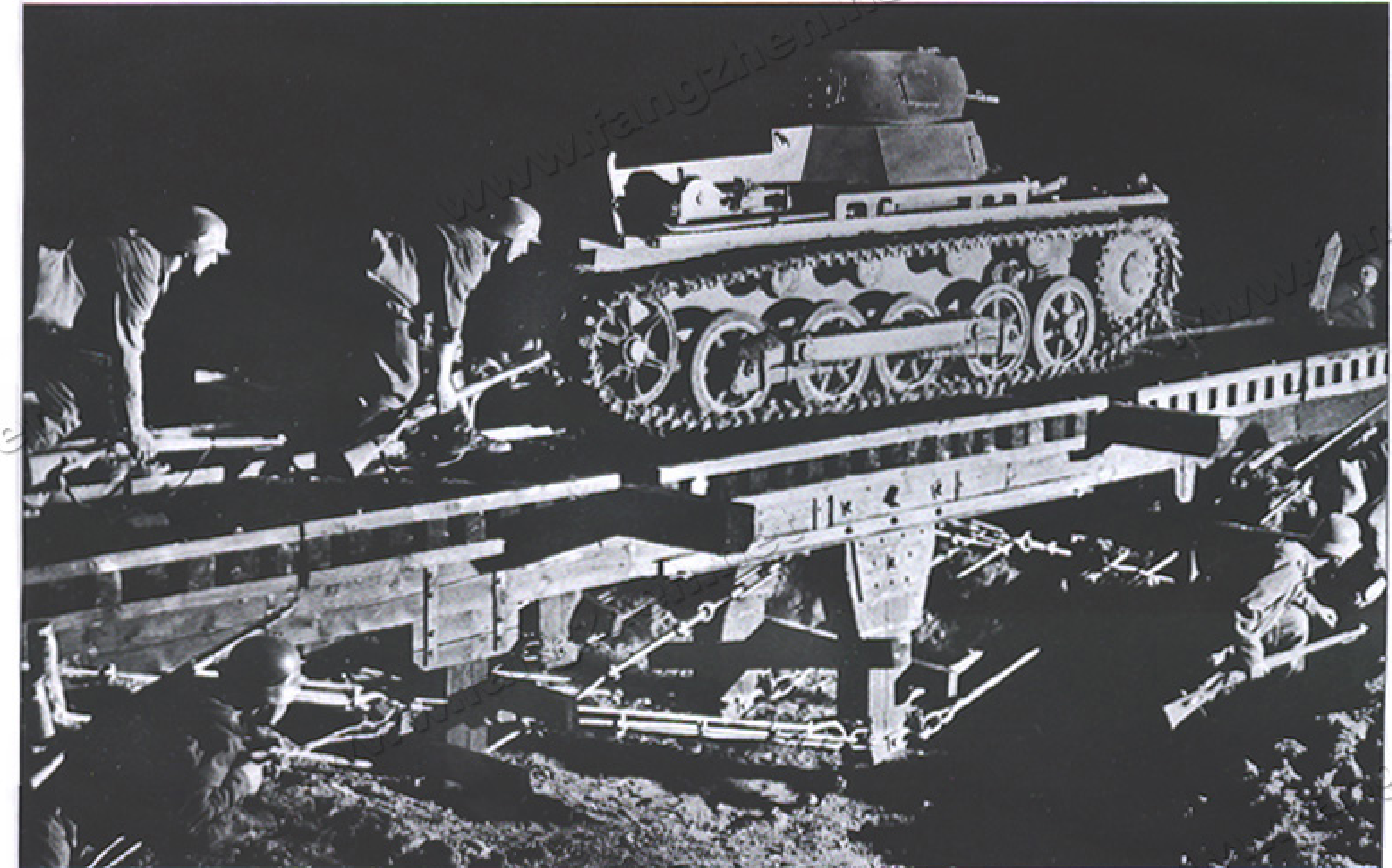
German tanks participate in a parade being held at the famous Nuremberg stadium, where propaganda rallies were held each year. Pz.Kpfw. Is (in the foreground) and Pz.Kpfw. IIs (in the background) pass in review before the main grandstand where hundreds of high-ranking Wehrmacht officers are gathered. Note the details of the early version Pz.Kpfw. I Ausf. A seen in the center of the photo. All tanks are painted in the solid dark gray camouflage scheme.



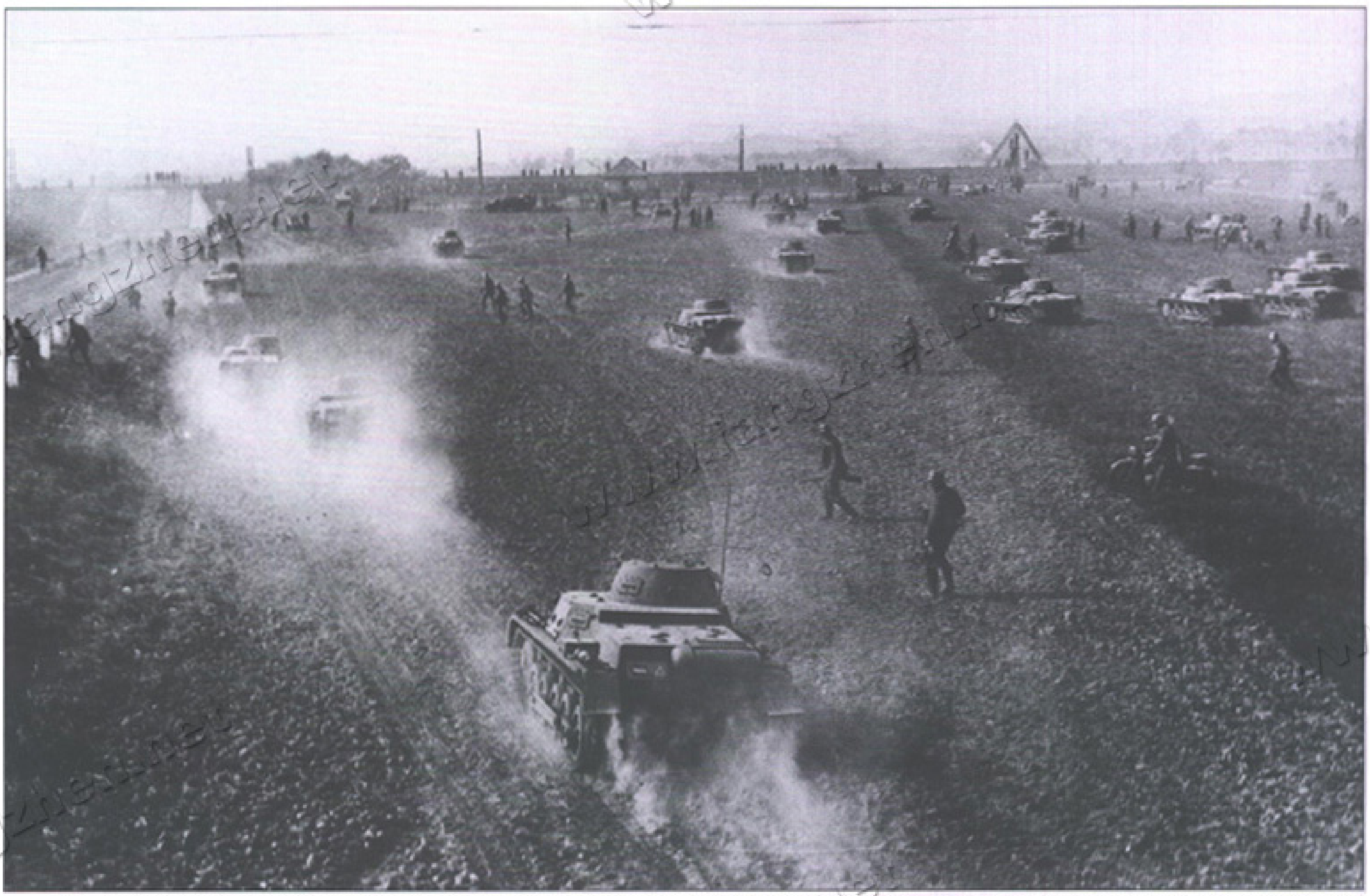
Elements of a tank unit are seen here following a field exercise somewhere in Prussia. This line of Pz.Kpfw. Is shows to advantage the camouflage pattern that was carried on all the surfaces of the tanks— on their sides, as usual, but also on their turrets. Each pattern is slightly different, but they are painted with the same scheme. However, the turrets are painted with two colors, while the superstructure of the nearest tank sports a three-color camouflage of green, brown and gray. The lightest of these colors was eliminated in 1935.



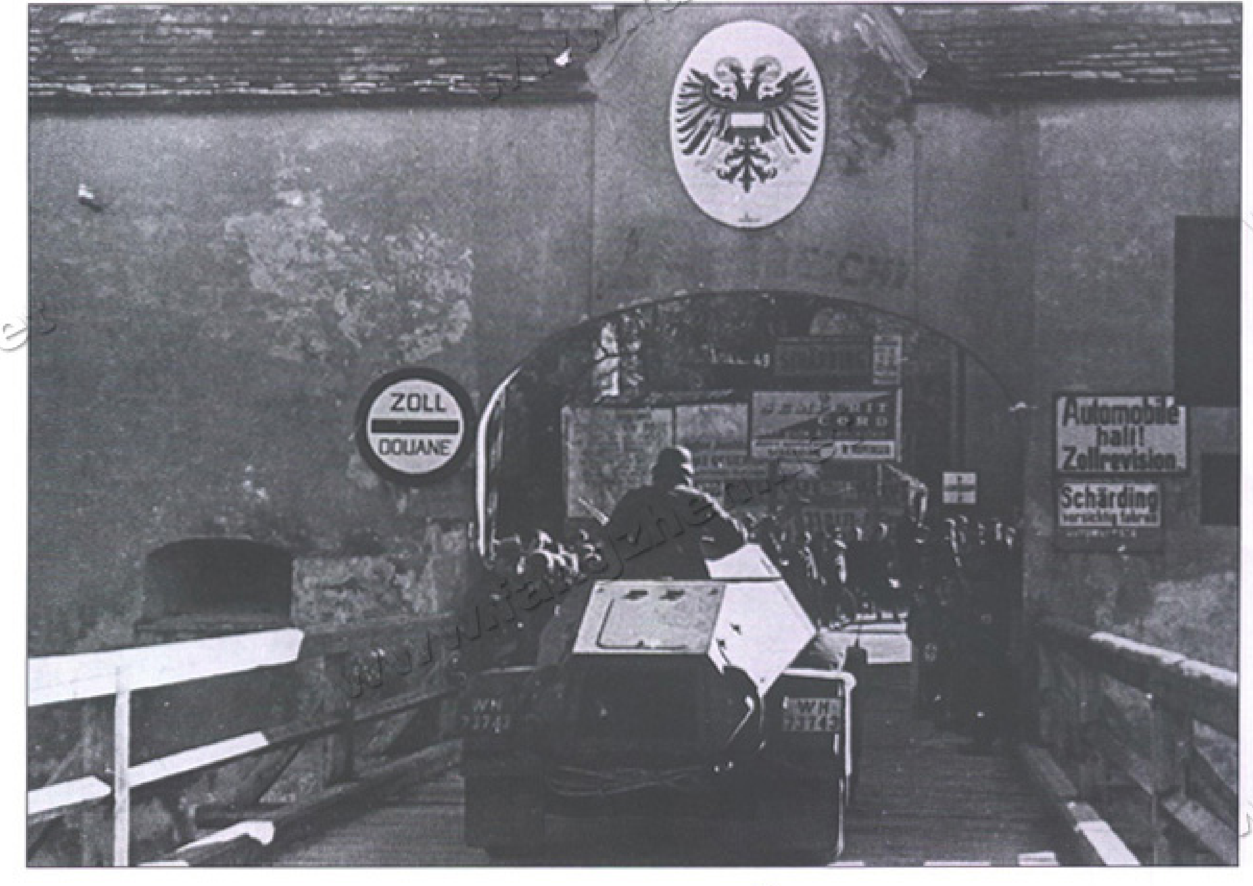
The greatest military reviews took place in Berlin on Unter der Linden avenue, and they always began with a long formation of tanks. This photo shows the lead element of an entire Pz.Abt. equipped with Pz.Kpfw. I Ausf. As parading before Hitler and the Wehrmacht staff. All the tanks are painted in standard camouflage, though it is illegible on a few of them.



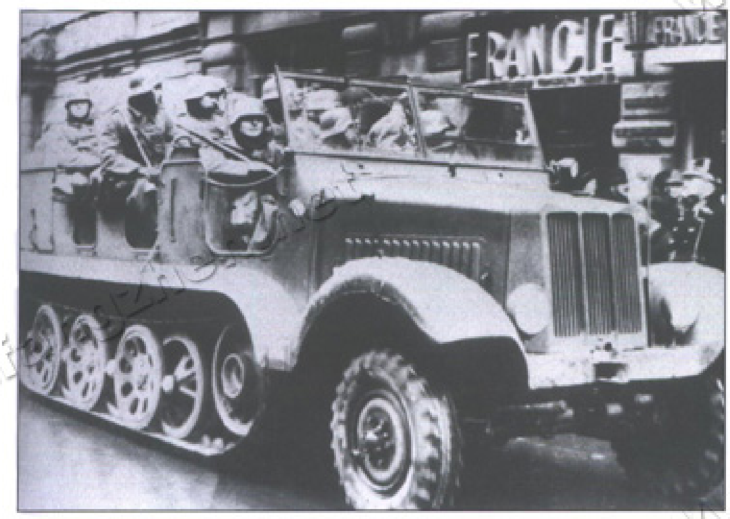
Nighttime photo of a field exercise conducted by a pioneer unit cooperating with a tank unit equipped with a Pz.Kpfw. I Ausf. B. Experience during the first two years of the war showed that holding a bridge in any condition was one of the main keys to success during any offensive operation.



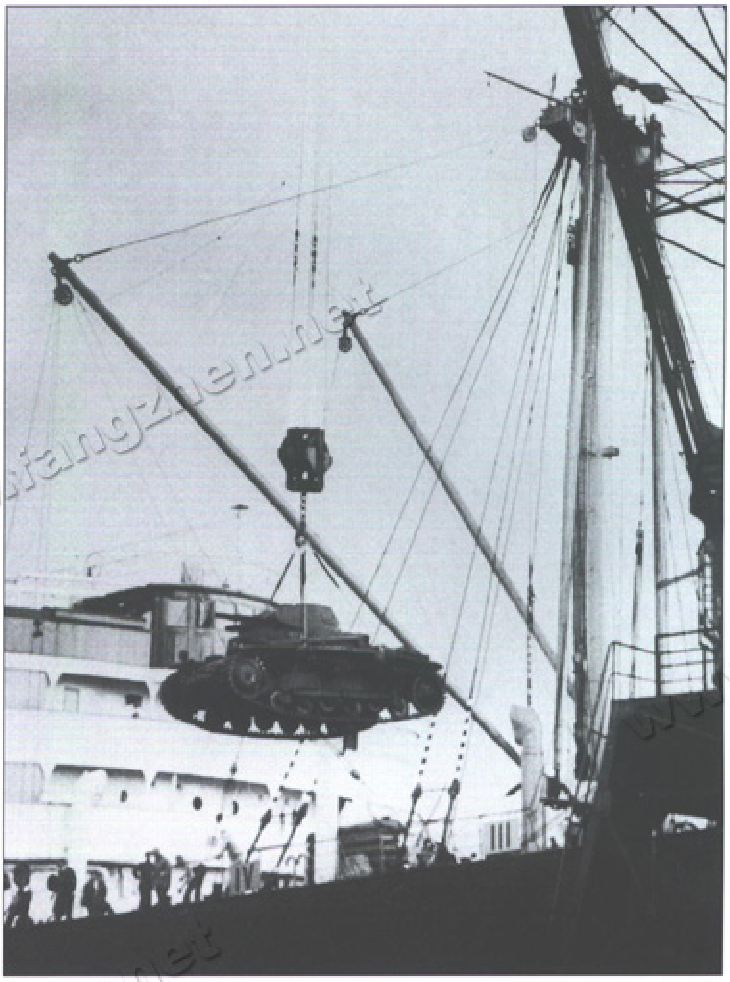
The attack of the Kondor Legion on Guadalla during the Spanish Civil War in 1937. Note the unit markings painted on the special plate installed at the rear of the superstructure of the Pz.Kpfw. I Ausf. A seen in the center of the photo. These markings are somewhat similar to the ones that would be seen later in WWII. The tank is marked with a rhomboid sign painted in at least three colors: white and red (?) bars outlined with black. To the right of this sign is a small, black number "1", which indicates the 1st company. Next to it is a triangle painted in two colors (red [?] outlined with white). All of them are painted on the light gray or maybe even a yellow rectangle.



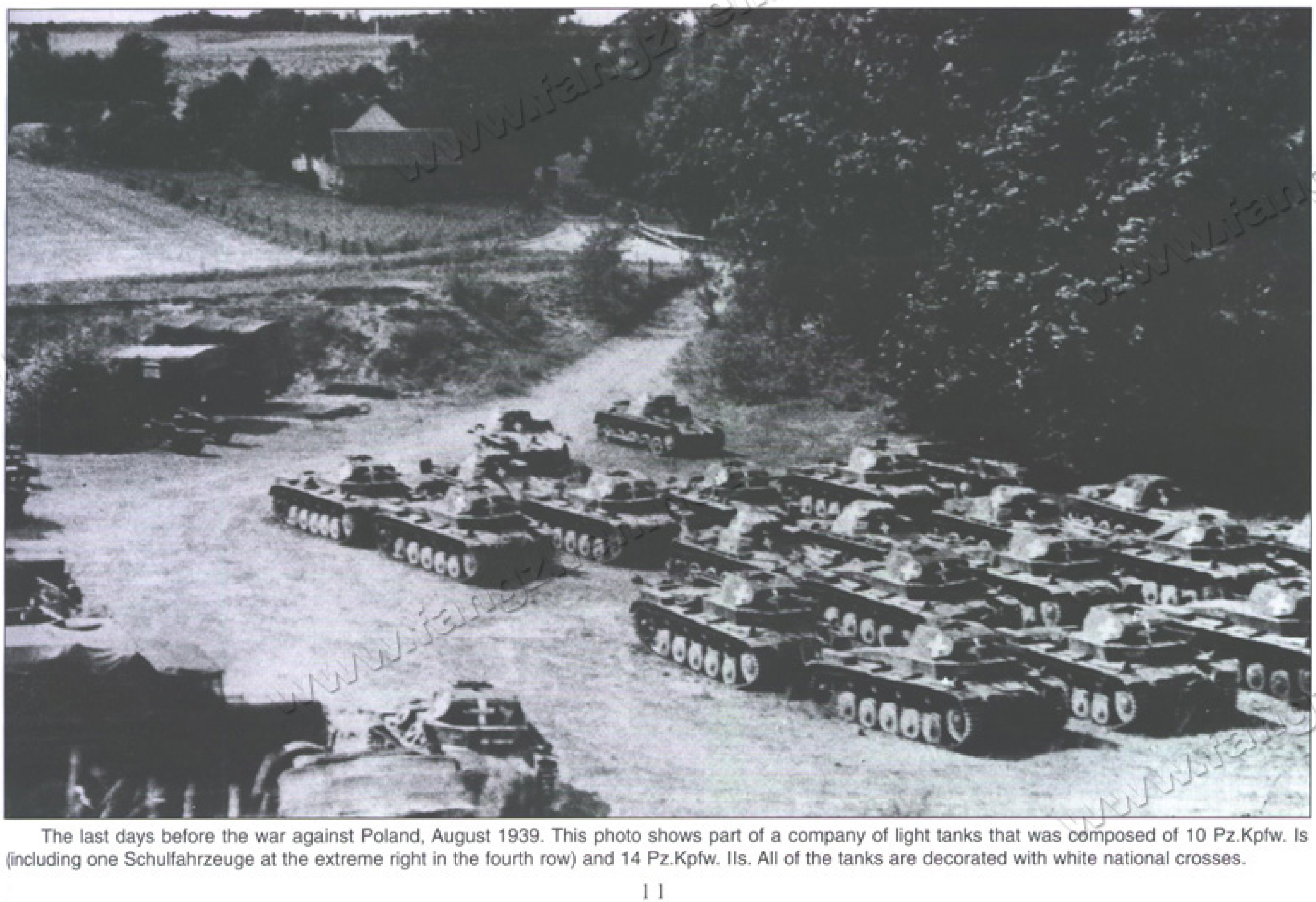
A Sd.Kfz. 222 enters Austria at a border entry post during the "Anschluss" (union with Germany) of that state into the Third Reich in March 1938. Its strange license plates, which could be seen on many vehicles during the two years prior to 1940, differ from both earlier and later ones. The one on the left is black with white letters, while the one on the right is just the reverse. Like almost all other vehicles used in the "Sonderfall Otto" operation, this armored car has no additional equipment affixed to its body.



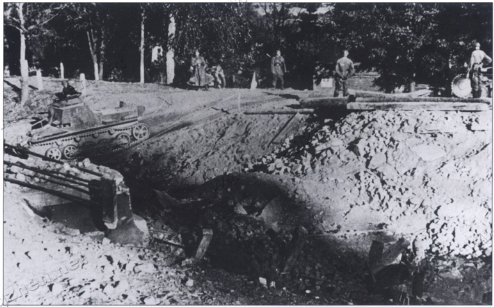
The invasion of the Czech Republic in March of 1939 was the last Wehrmacht victory achieved without bloodshed. As in the case of Austria's Anschluss, the Czech state was incorporated into the Third Reich with the help of many units from German motorized divisions — a typical demonstration of power. Here we see a Sd.Kfz. 7, the most popular half-track prime mover used for combat and support duties during WWII.



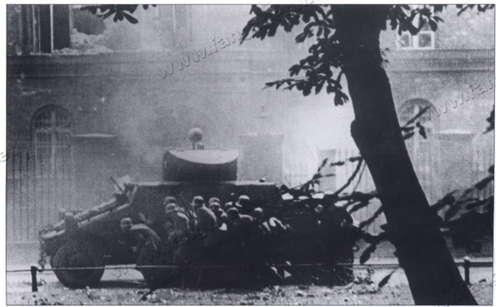
A Pz.Kpfw. II Ausf. A or Ausf. B is unloaded from a transport ship in the summer of 1939 at one of the ports of East Prussia, probably in Königsberg, where Pz.Div. "Kempf" was employed in the attack on the Polish northern flank. It was equipped with 115 pieces of various models of the Pz.Kpfw. II, which was the main type of tank used in this unit. The division lost 66 vehicles out of a total of 248 tanks during Operation "Fall Weiss".



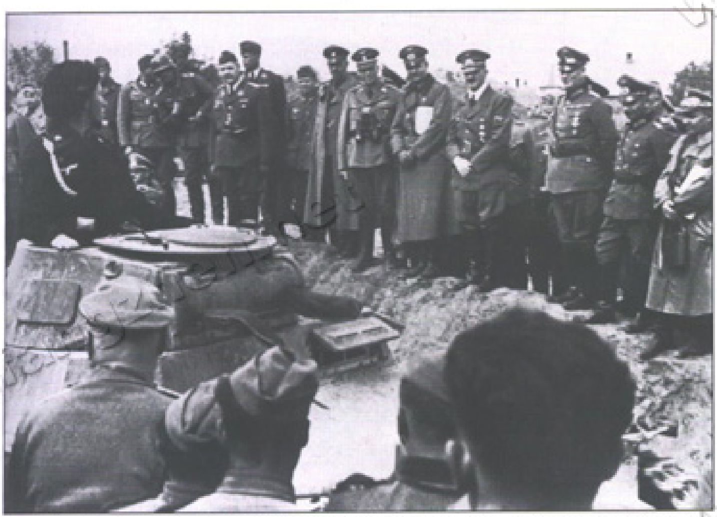
The last days before the war against Poland, August 1939. This photo shows part of a company of light tanks that was composed of 10 Pz.Kpfw. Is (including one Schulfahrzeuge at the extreme right in the fourth row) and 14 Pz.Kpfw. IIs. All of the tanks are decorated with white national crosses.



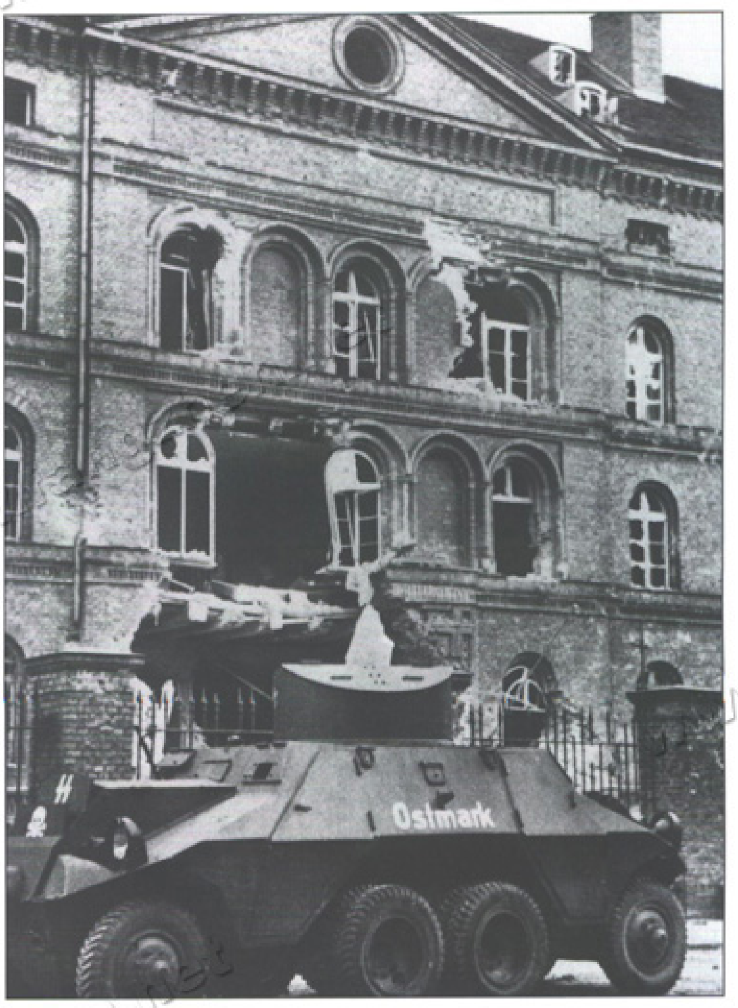
A kleiner Panzerbefehlswagen I Ausf. B crosses a stream near a demolished bridge. The tank is covered with a thick layer of dust. Oddly, most of the national cross on the superstructure side is covered by mud while the cross painted on the front plate of the superstructure is in much better condition.



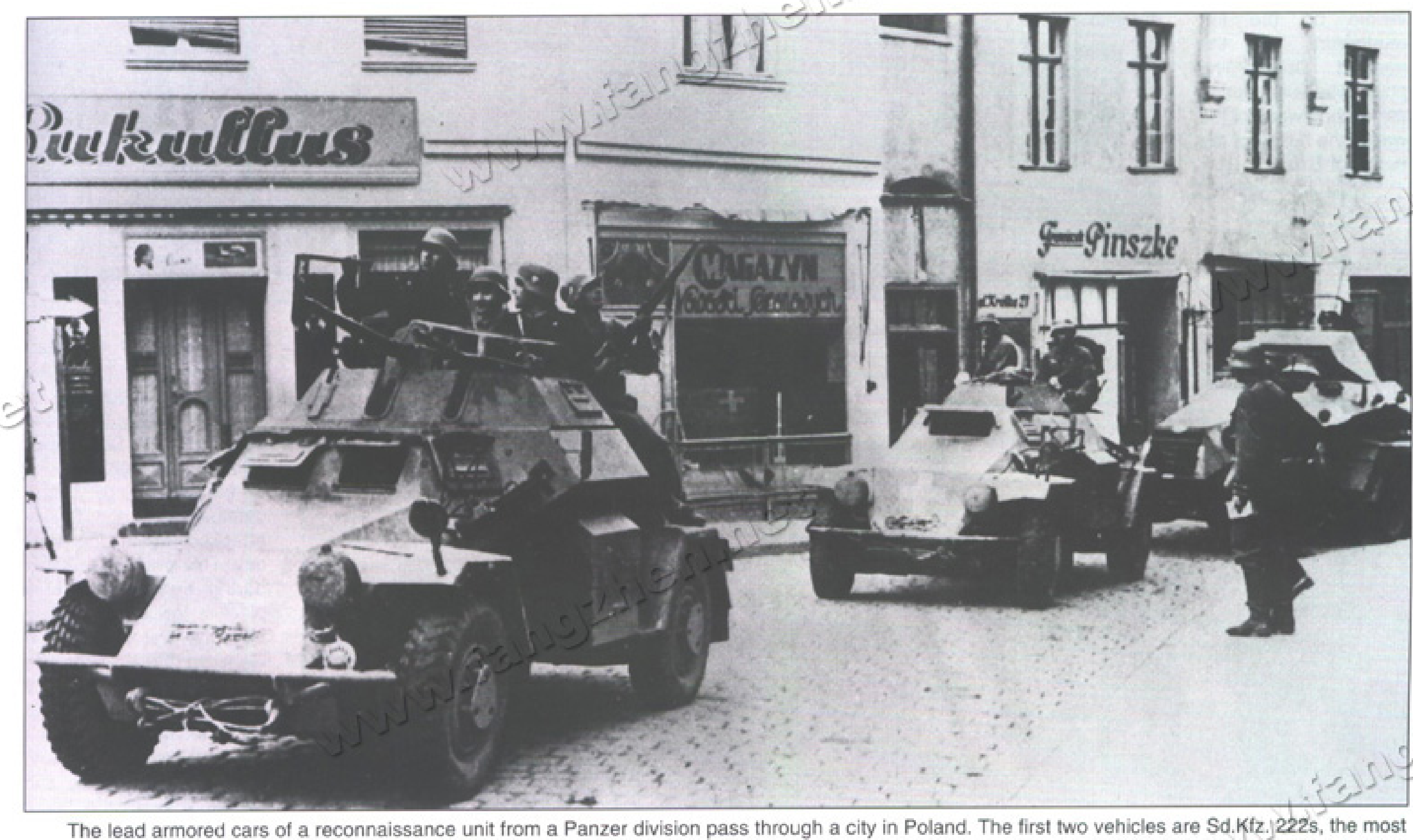
A group of soldiers from the Danzig SS Heimwehr Battalion wield hand grenades as they attack the Polish Post Office building in Danzig (now Gdańsk). They are covered by an Austrian-built ADGZ heavy armored car, which won fame in exactly these types of combat. The German forces in the Gdańsk area used a whole platoon of these vehicles. They were also employed in the fighting for Gdynia.



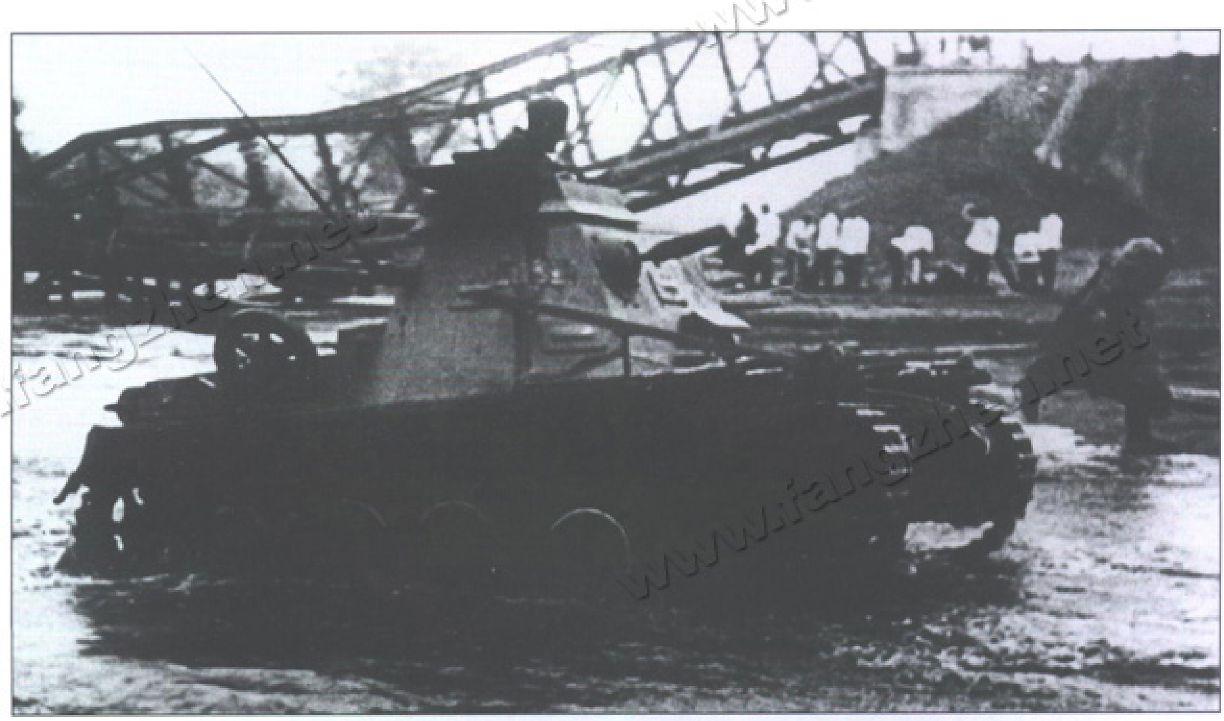
On 5 September 1939 Adolf Hitler inspected tanks of Pz.Rgt.6 of 3.Panzer-Division, which belonged to XIX Ar.Kp. At that time this regiment was not involved in combat, which explains why the guns of the Pz.Kpfw. I seen at the photo are covered and the soldier in the turret has a clean uniform and shirt (and even wears a necktie). To the left of Hitler is General Keitel and to his right is General Heinz Guderian, commander of XIX Ar.Kp.



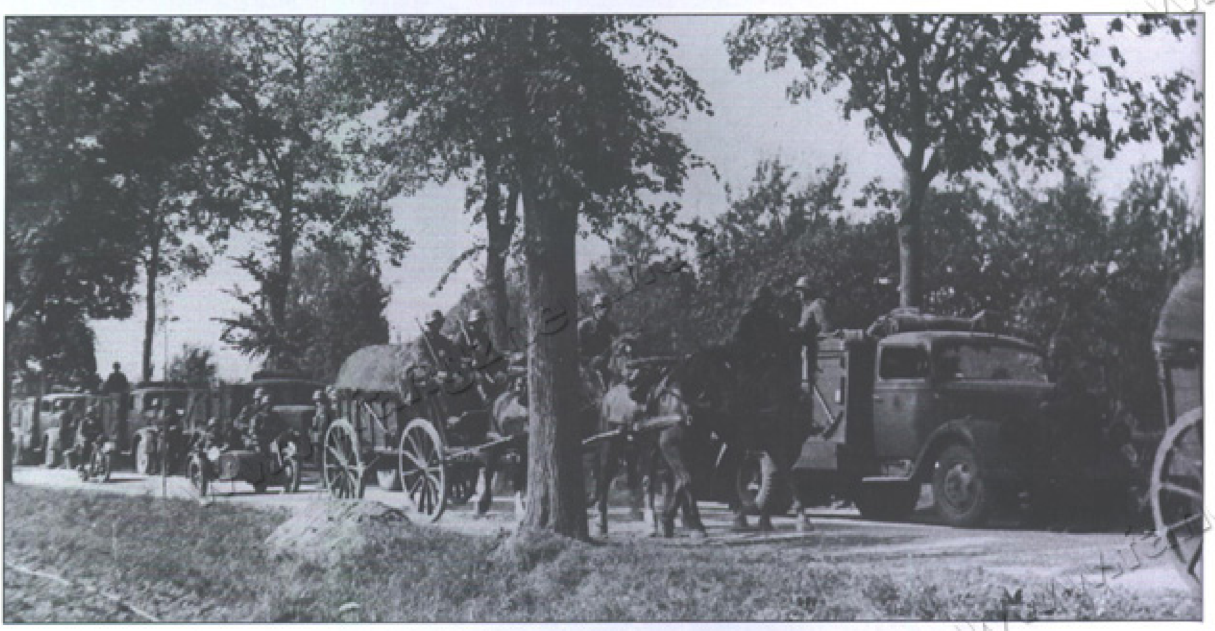
Another ADGZ heavy armored car that was photographed just after the capture of the Danzig Post Office. This photo clearly shows the vehicle's markings, which consist of SS markings on the front part of the hull and the name of this ADGZ armored car — "Ostmark". The Police emblem is just visible on the side of the turret.



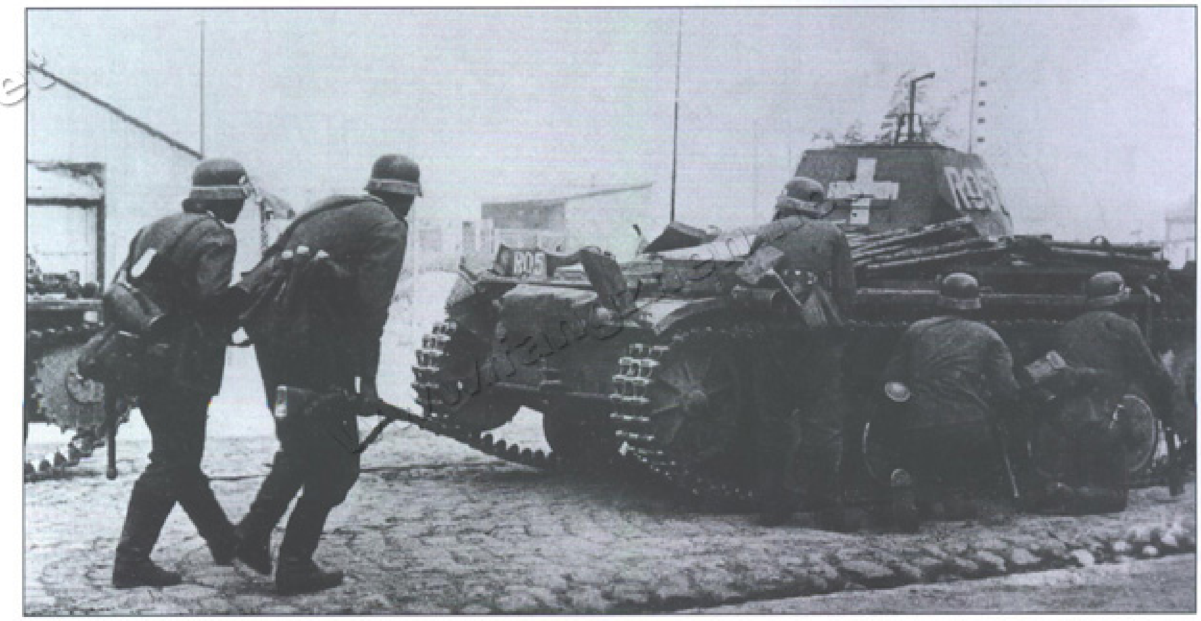
The lead armored cars of a reconnaissance unit from a Panzer division pass through a city in Poland. The first two vehicles are Sd.Kfz. 222s, the most popular German armored car of the whole war. Behind them may be seen a Sd.Kfz. 231, a three-axle heavy armored car first built in 1932. During the fighting in 1939 this AFV was judged to be obsolete, and its front line career slowly came to an end. Both leading cars have white crosses painted on the front plates, each being placed a bit differently. The second one has the same markings on the sides of its hull, as the reflection in the shop window attests.



A kleiner Panzerbefehlswagen I Ausf. B emerges from the Bzura river in front of the twisted wreckage of a bridge. Note how the white national cross below the tank crew member has been completely painted over with black paint. The same was done with the cross painted on the front plate above the driver's visor. The photo was taken between the 6th and 9th of September, which means the Germans learned quickly that the white national markings were dangerous.

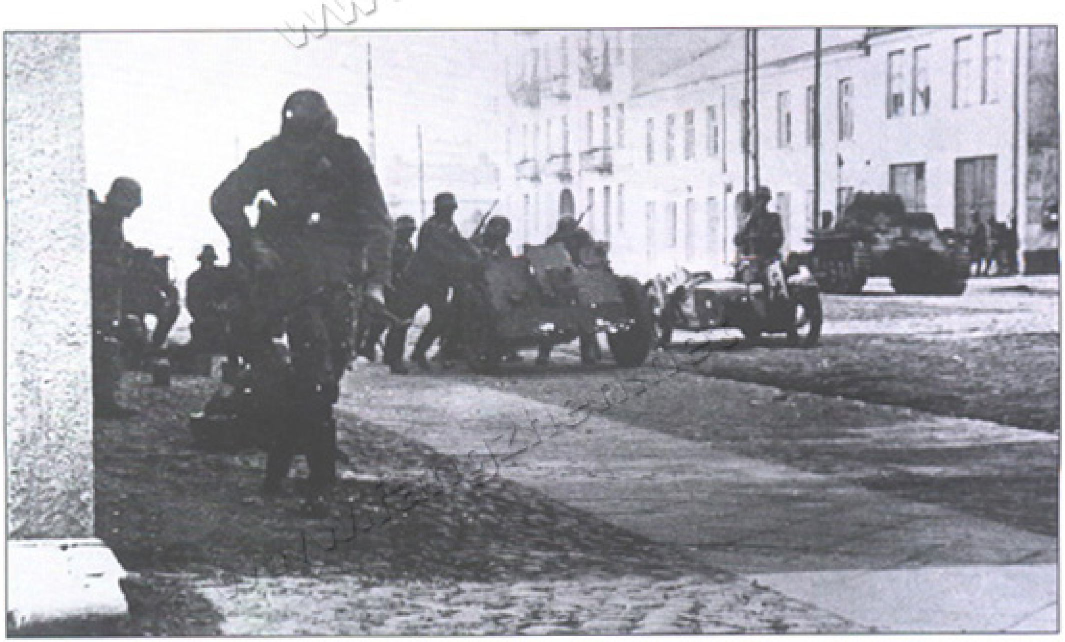


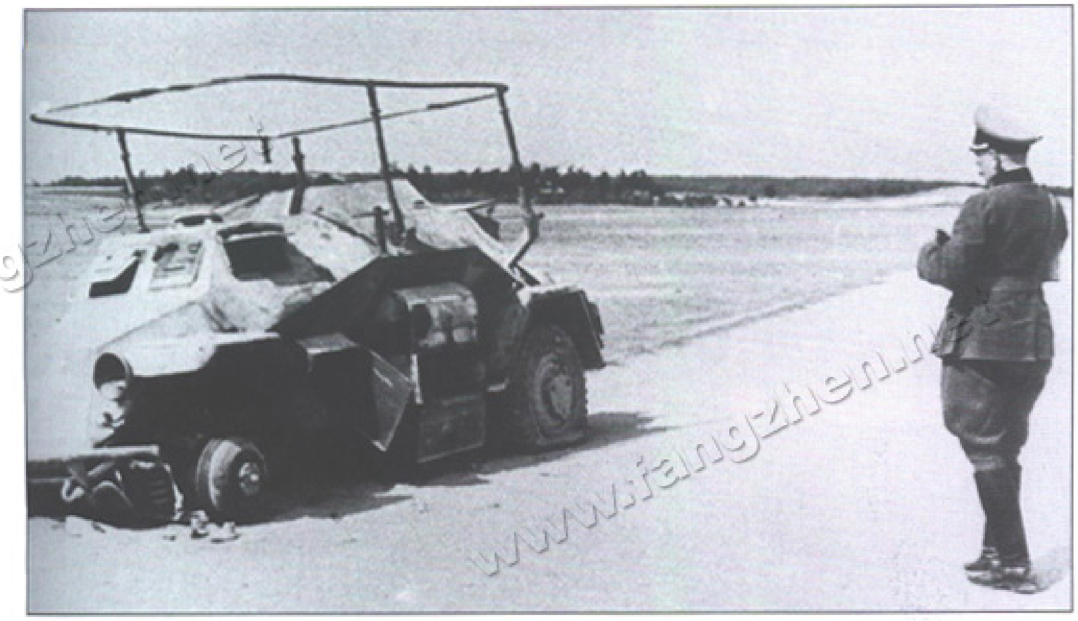
A column of Opel Blitz trucks from 1.Panzer-Division passes by infantry horse-drawn wagons. Tactical markings are visible on the left mudguard of the nearest Opel. The photo was taken during the second week of the war at the height of the battle for Bzura.



Soldiers of 4.Panzer-Division struck the southwestern outskirts of Warsaw early in the evening of 8 September. Though they were stopped in the streets by Polish defense forces, the division attacked again the next day. This photo was taken during fighting that took place a few dozen meters from the first barricade in Grójecka street. Note the markings of the Pz.Kpfw. II providing cover for the soldiers. They were painted in white (on the hull) and yellow (on the turret) and indicate that the tank belongs to the staff company of one of the Panzer regiments from 5.Pz.Brig.

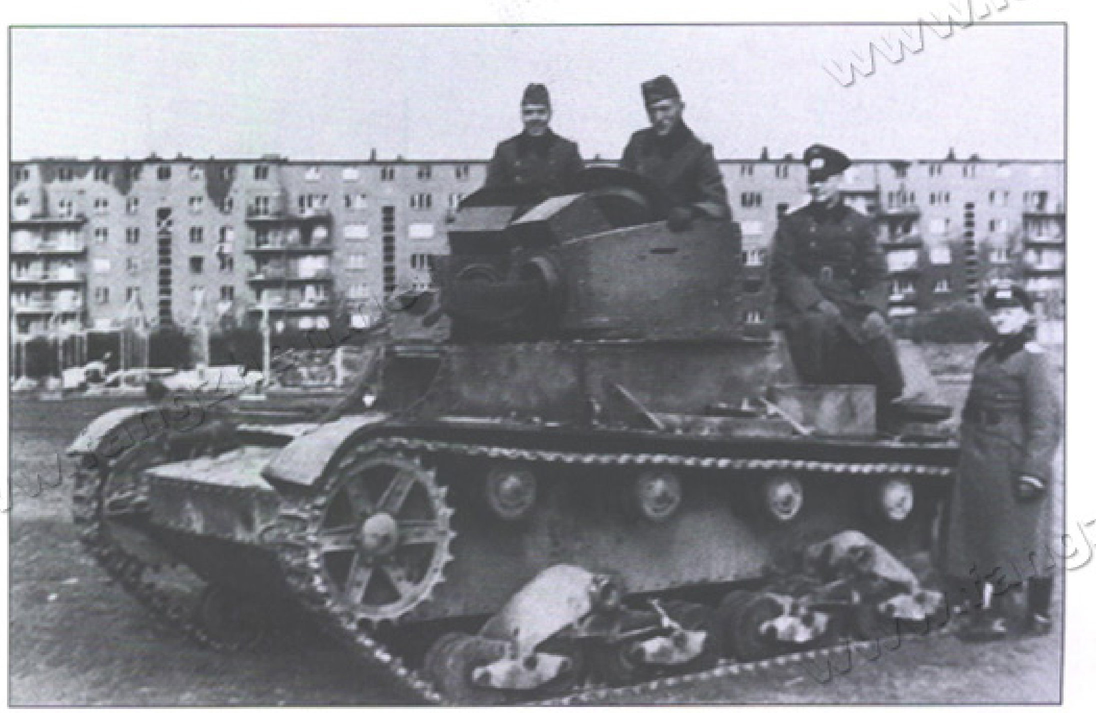
Troops from 4.Panzer-Division storm the barricade on Grójecka street during the morning hours of 9 September. The main problem for the Germans in the early moments of this attack was the lack of available heavy weapons. They had to use tanks armed only with machine guns, while the Poles had 75mm guns and 37mm anti-tank guns. The Germans had to wait for the arrival of about five 3.7cm anti-tank guns and 7.5cm infantry guns. One of the light 7.5cm IG 18 guns is being positioned at the center of this photo. A Pz.Kpfw. I can be seen in the background.

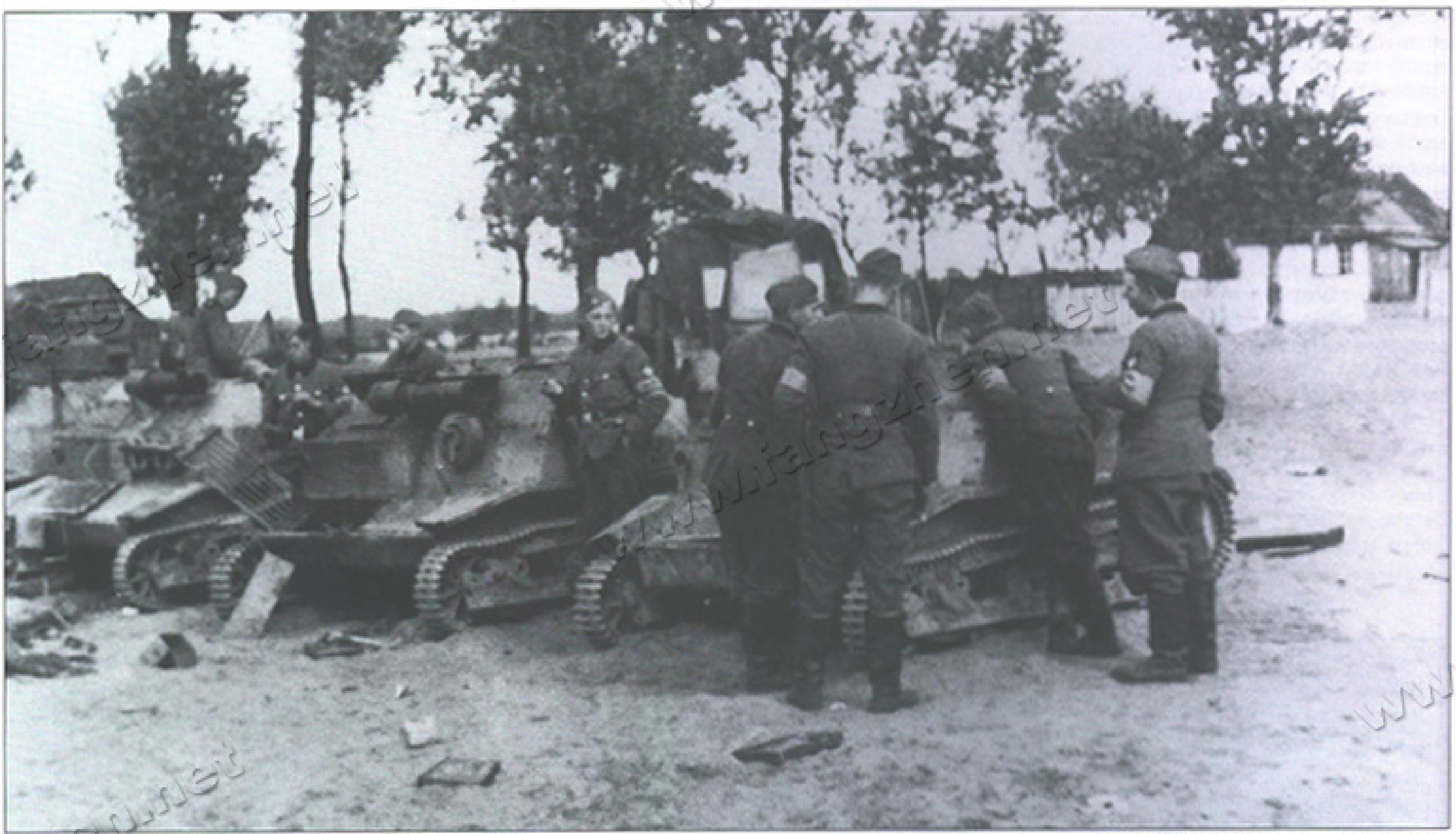




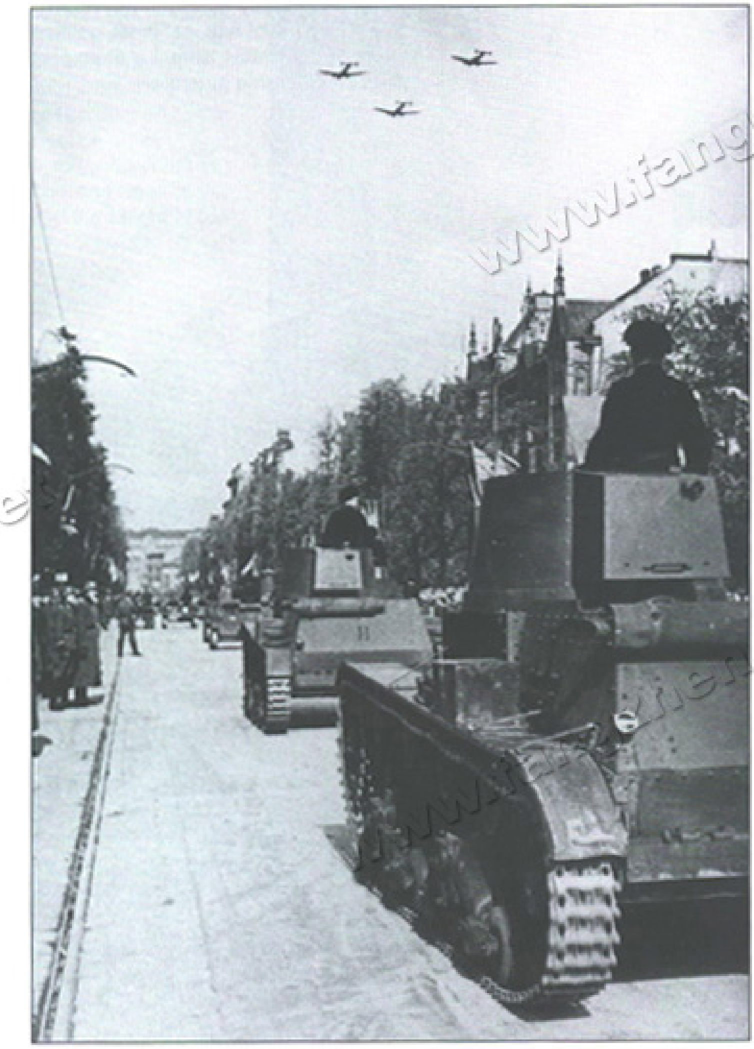
A German officer examines a victim of the Polish anti-tank weapons — a completely demolished Sd.Kfz. 223 with a white national cross painted on its front plate. Note its prominent rectangular frame antenna.

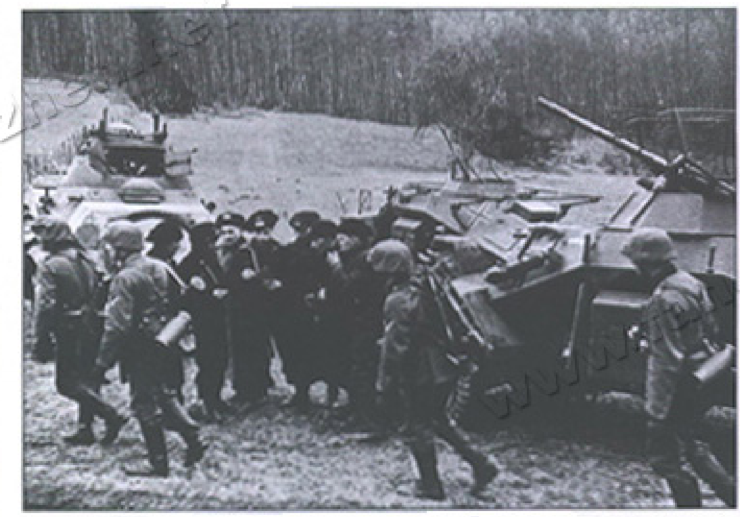
The Polish armored force was equipped with obsolete vehicles such as light tanks and tankettes. Many of them were captured by the Germans and tested (or even used) in their second-line units. Here is one of the early model 7-TP tanks armed with twin machine guns, which was abandoned by the Poles in Warsaw (probably due to a lack of fuel) and then put to use by the Germans.





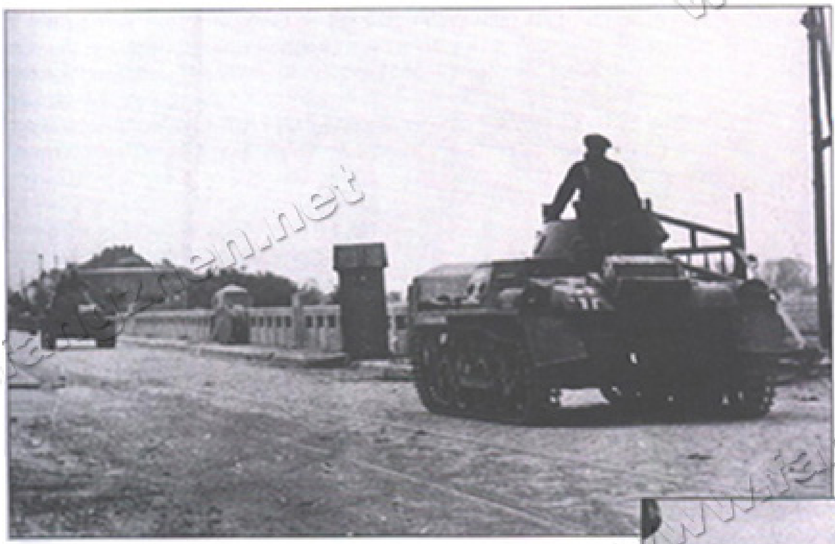
Four Polish TK or TKS tankettes captured by the Germans after a battle are inspected by a second-line Wehrmacht formation. These tankettes, which formed the bulk of the Polish armored forces, were no match for even the German light tanks. Some of these vehicles were put into German service and used for the duration of the war.



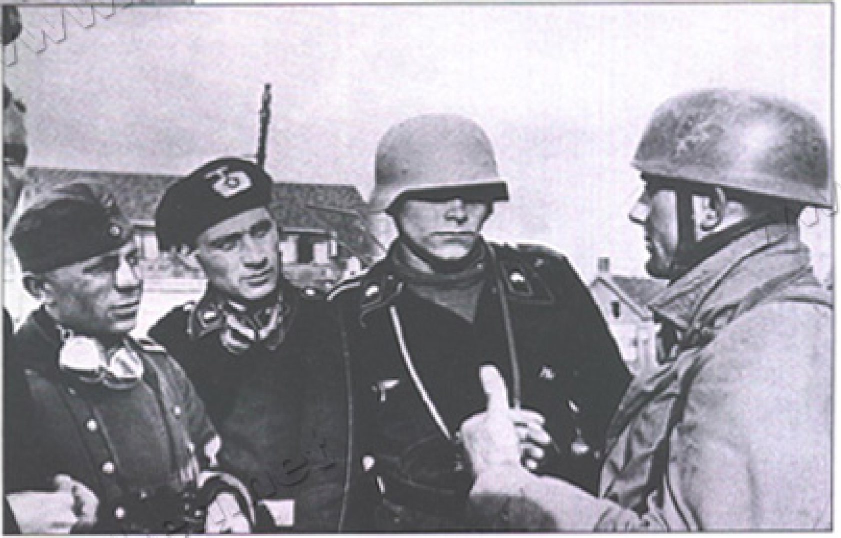


A reconnaissance unit conducts a field exercise somewhere in Germany in early spring of 1940. From right to left are: Sd.Kfz. 222, Sd.Kfz. 223 and Sd.Kfz. 231, and behind this six-wheeled vehicle is another Sd.Kfz. 223. The camouflaged helmet covers worn by the soldiers were unusual for that period. Of interest is the small inscription painted in white on the Sd.Kfz. 222 just in front of the turret.

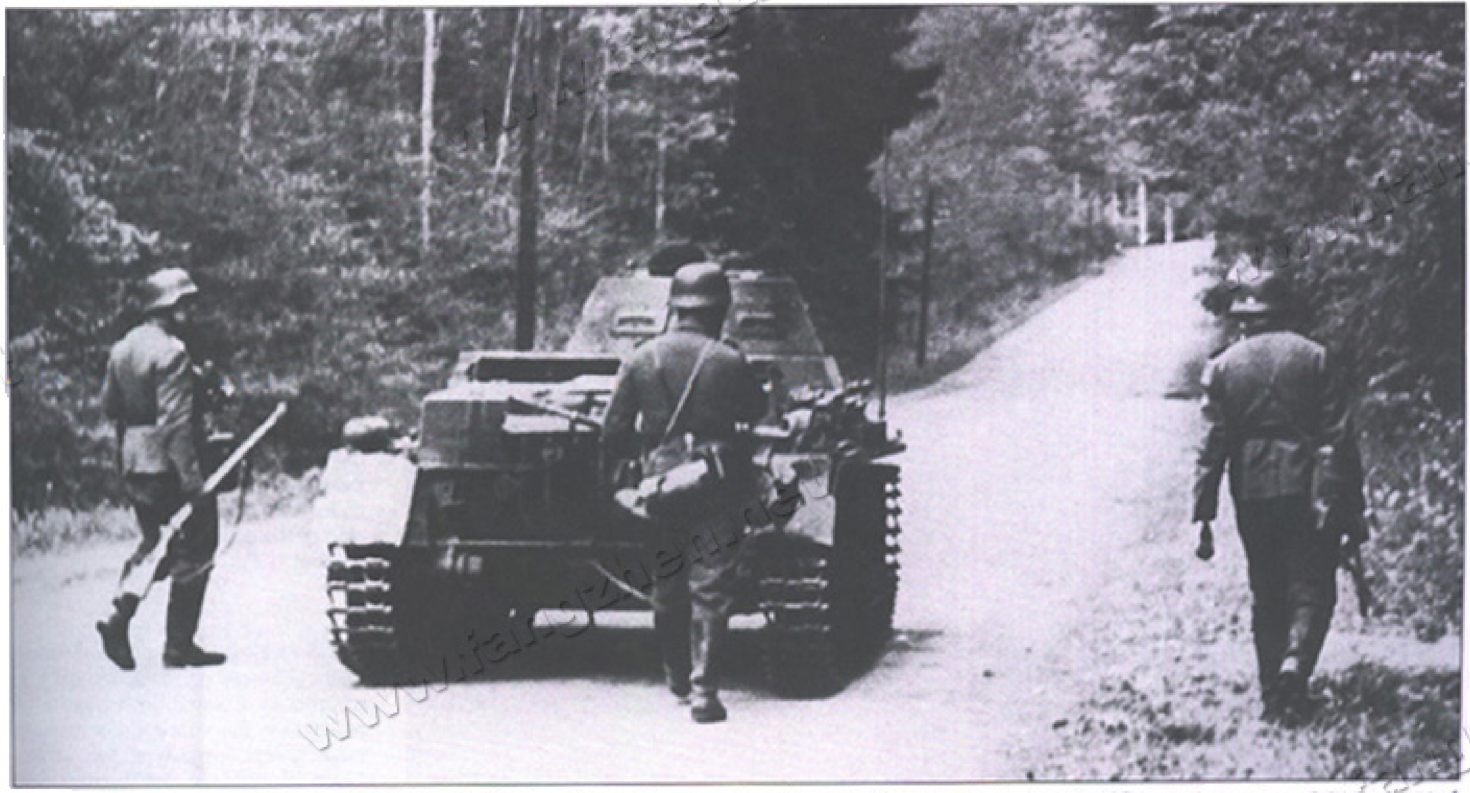
Many Polish vehicles were displayed in the great victory parade in Warsaw in October 1939. All of them were repainted with German dark gray paint, and many of them were marked with white crosses. No fewer than 15 ex-Polish tankettes and tanks participated in this show. Here we see the two 7-TP tanks, preceded by a line of TK/TKS tankettes. The Germans later referred to the TKS tankettes as the le Pz.Kpfw. TKS(p), while the 7-TP tanks were known as the Pz.Kpfw. 7-TP(p).



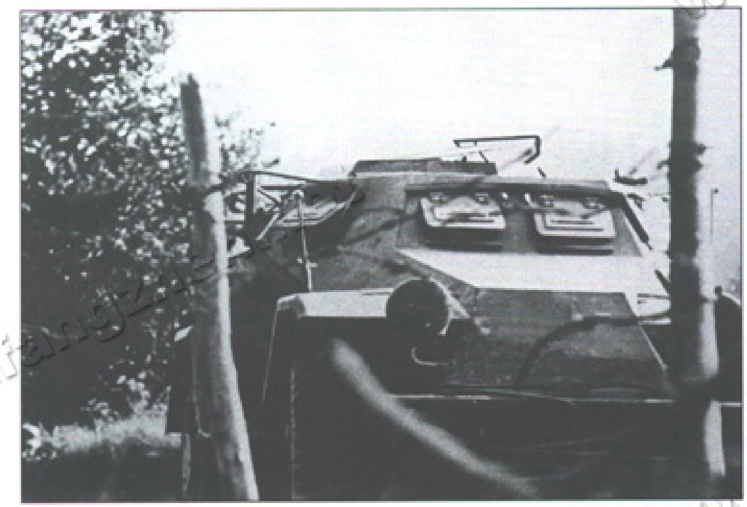
A column of Pz.Kpfw. I Ausf. As rolls into Belgium. The Pz.Kpfw. I was still one of the two main types of German tank in the first part of 1940; the Panzerwaffe had 1,077 such tanks on 10 May 1940. The second main tank was the Pz.Kpfw. II with 1,092 pieces, while there were only 671 Pz.Kpfw. III/Pz.Kpfw. IV tanks available.



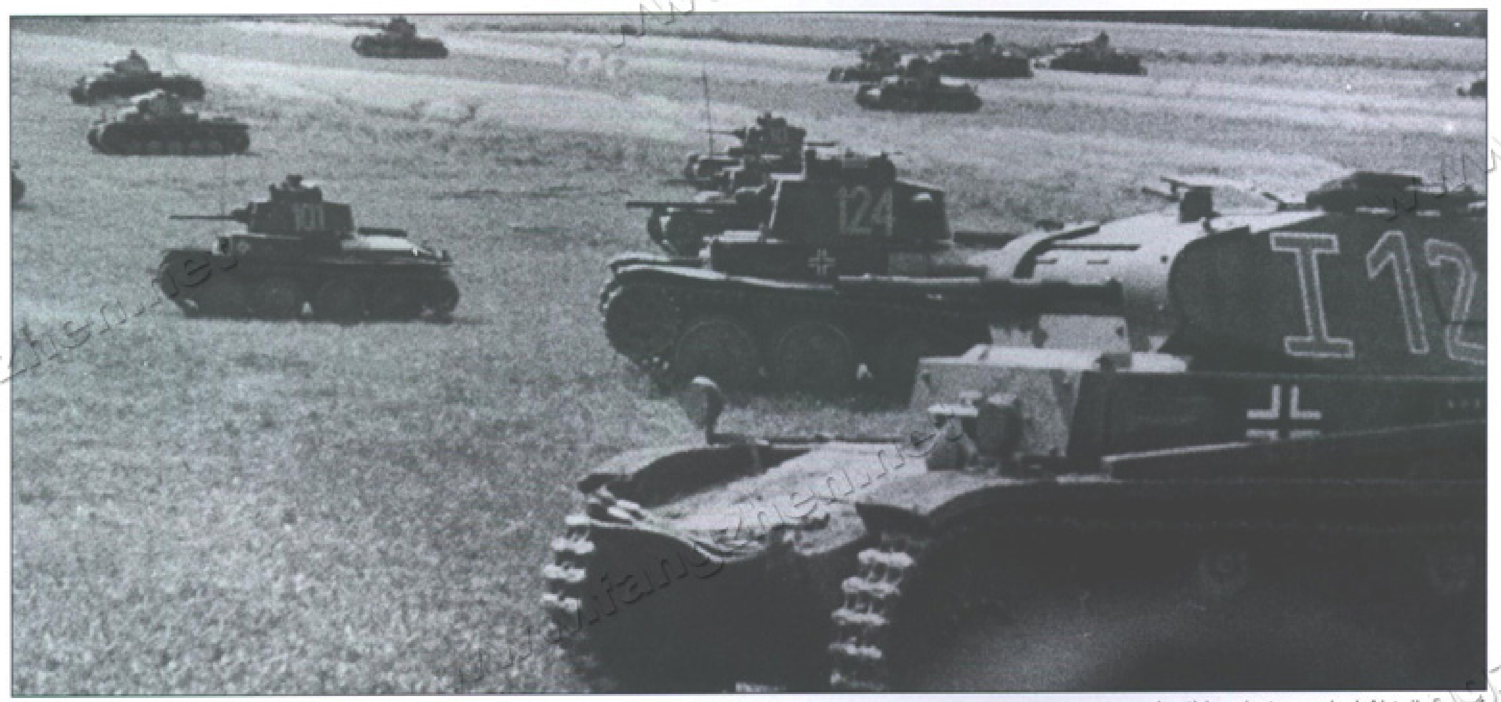
A paratrooper talks to crewmen of a Sd.Kfz. 223 (parts of the turret of this vehicle are seen behind the soldiers) from the reconnaissance unit of 9.Panzer-Division. The photo was taken following the capture of Rotterdam on 14 May 1940.



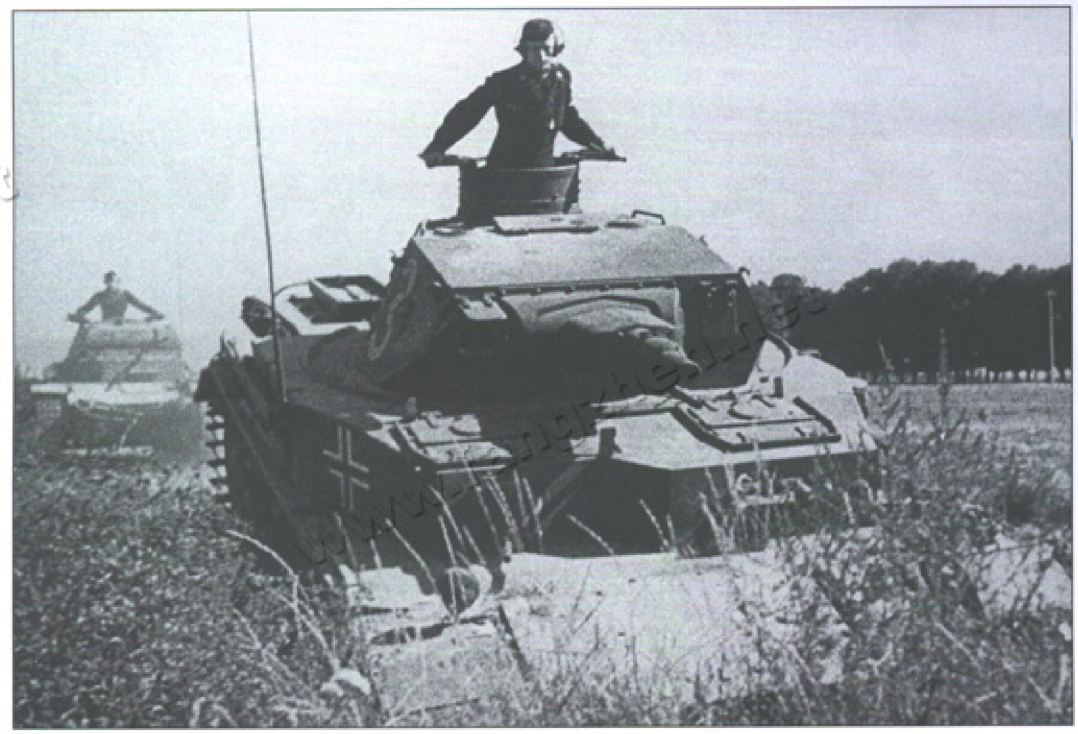
An advance team consisting of a Pz.Kpfw. I Ausf. B and few soldiers marches through a forest in the Ardennes while opening an entry into the heart of France for a German division. The Pz.Kpfw. Is were completely useless as a combat vehicle. Not only did it have problems traversing difficult terrain, but its minimal armament rendered the tank useless for anything other than acting as a support vehicle or a target for anti-tank guns (it could divert the anti-tank gunners' attention away from other heavier tanks). Nevertheless, lacking any better tank, the Germans employed them in large numbers throughout their divisions.



A Sd.Kfz. 223 guards the position of German troops somewhere in France. The vehicle's frame antenna is lowered, which means that the radio was not in use at the time the photograph was taken. This armored car had a standard FuG for communication in armored fighting vehicles and the special FuG 10 with a frame antenna, which helped to maintain a liaison between platoon or company level command units and higher command levels.

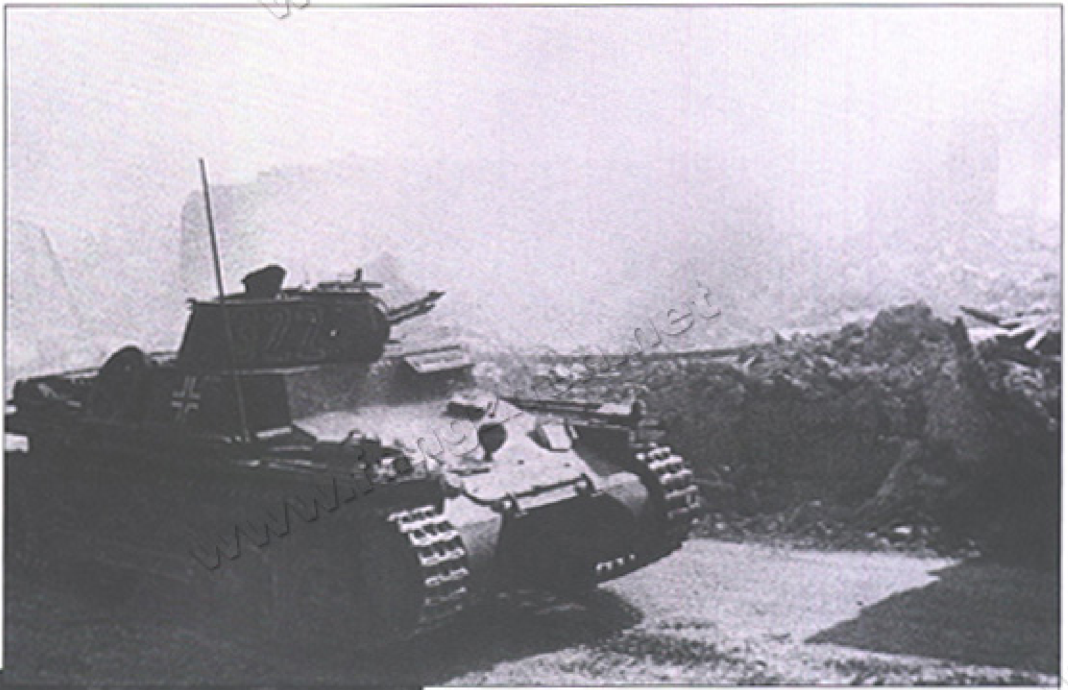


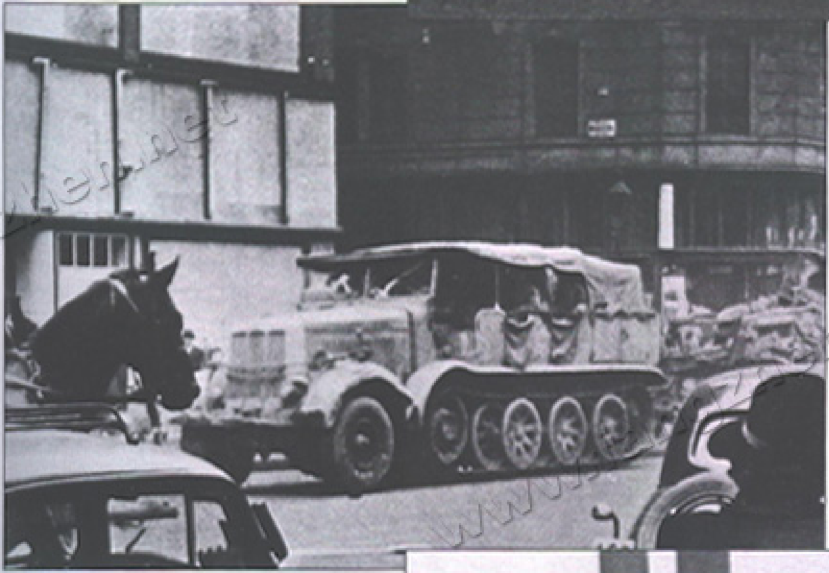
In this photograph I.Abteilung of 7.Panzer-Division advances across an open field against an enemy position. In the center of the formation are Pz.Kpfw. 38(t)s tanks guarded on their flanks by Pz.Kpfw. IIs and supported by Pz.Kpfw. IVs at their rear. The tactical numbers on the turrets of the Pz.Kpfw. 38(t) indicate that the vehicles are from two platoons of first company. The Pz.Kpfw. II nearest to the camera has markings painted in red and outlined in white that indicate it is the 12th tank in the 1st battalion's staff company. The tactical sign of the division is visible under the number "12".



An example of the earliest version of the Pz.Kpfw. IV tank, the Ausf. A, negotiates a ditch in a field. The hatches on the front plate of the turret were typical features of this version. Only 38 units of this version were produced before 1939. The tank carries a large tactical number painted on the sides of the turret, but we can only see the last digit, the number "3" painted in two colors.

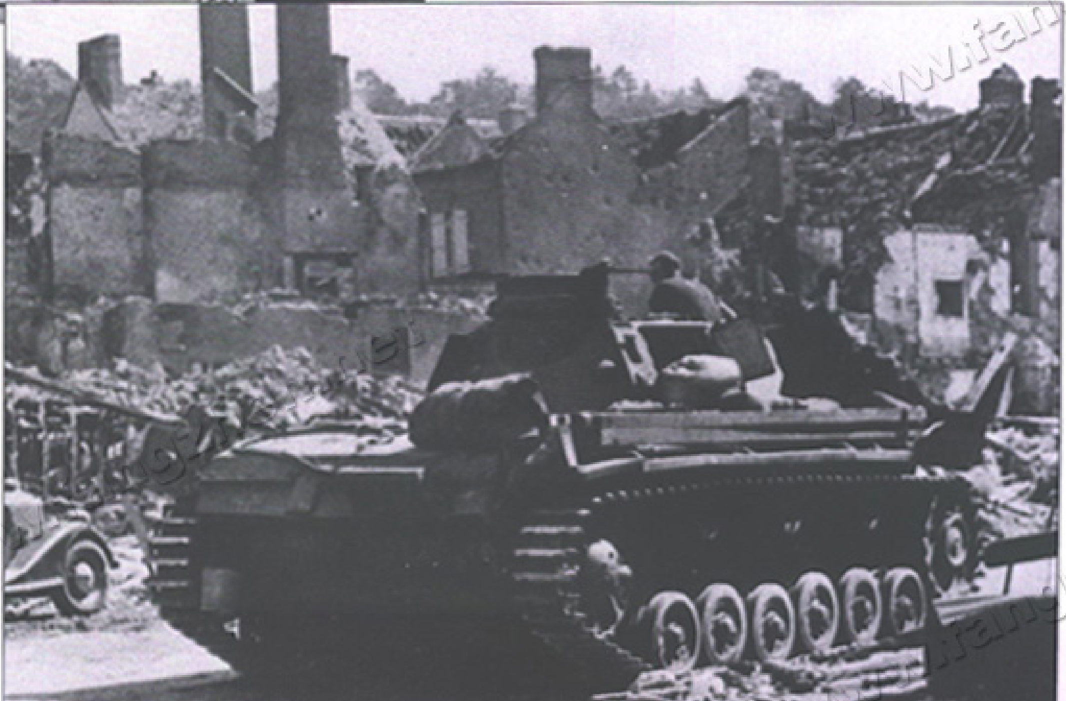
One of 34 Pz.Kpfw. Is from 7.Panzer-Division passes by ruins of a Belgian town in the middle of May 1940 while marching into northern France on the northern flank of XV Pz.Kp. The tactical number on the turret was painted in the typical way for this period of the war, i.e., in large red or black numerals outlined in white. A two-color national cross is visible on the side of the superstructure. Near it is a yellow divisional sign, which is repeated on the front plate just under the turret.

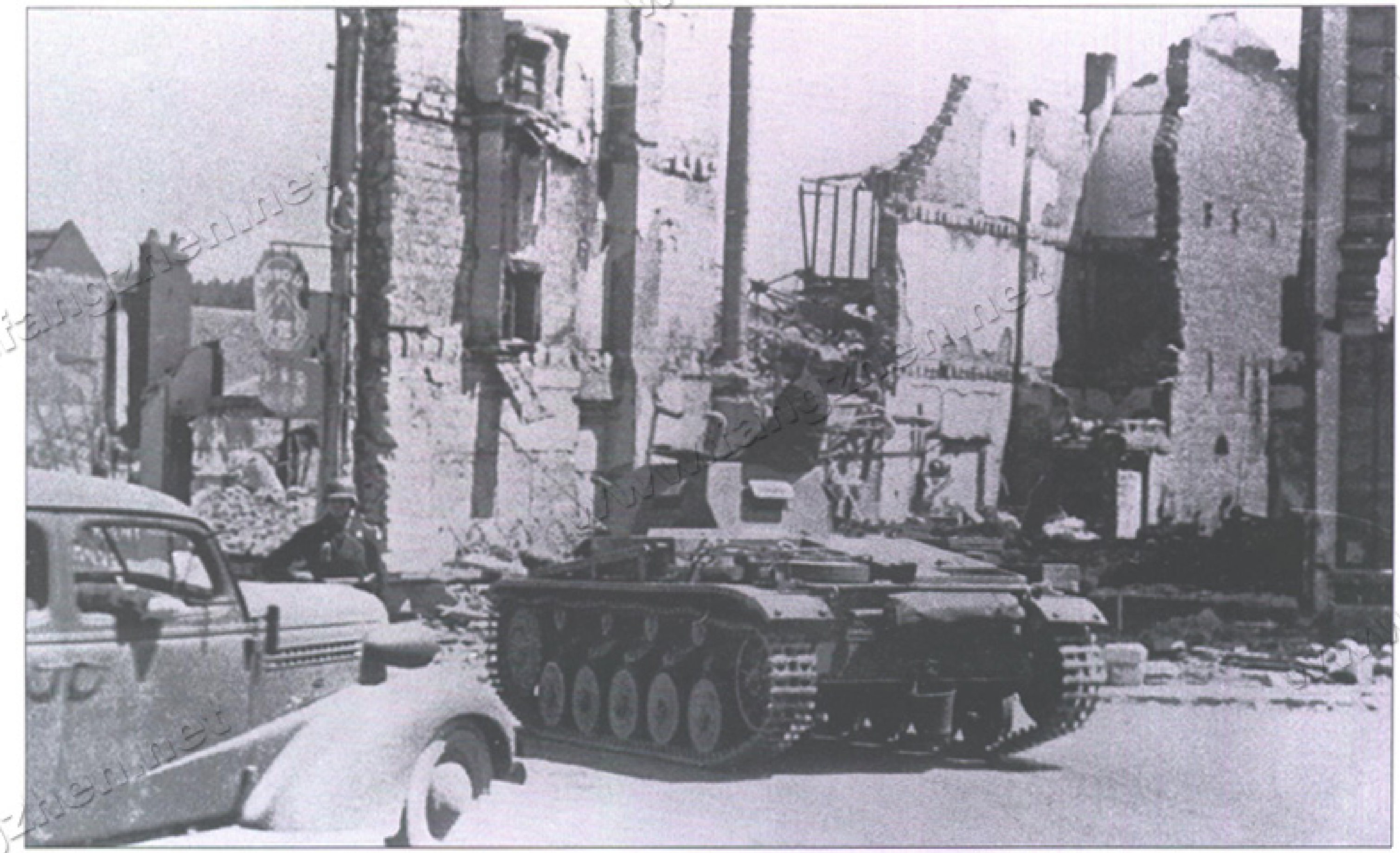




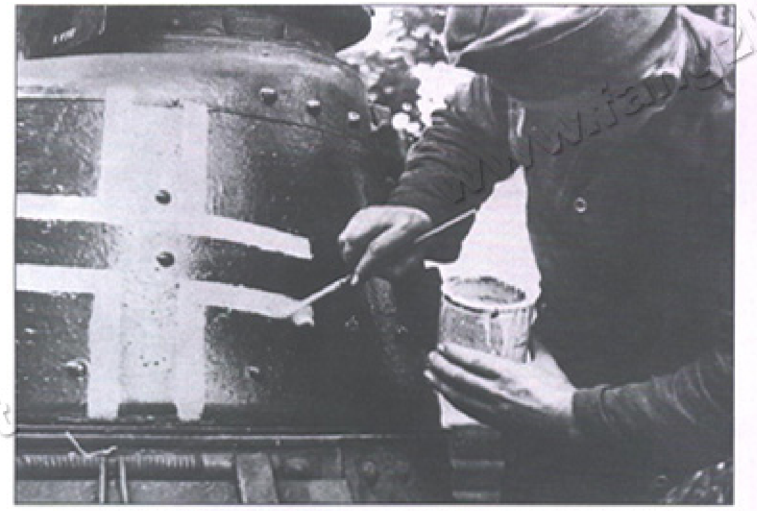
As they walk to work, people in a city in western Europe cast an eye on the new vehicles that arrived in their city early in the morning. Here a German Sd.Kfz. 7 prime mover tows a heavy gun as the German troops go steadily on their way toward the front line.

A Pz.Kpfw. III goes down a street in a heavily war-ravaged town in France. There were 381 Pz.Kpfw. IIIs in the Panzerwaffe on 10 May, and 135 of them — about one-third — were lost during the fights against the Allies. Smoke candle dischargers are affixed to the rear of the tank. The haphazard way the interior part of the turret hatch door was painted indicates that it may have been quickly repainted by spraying.

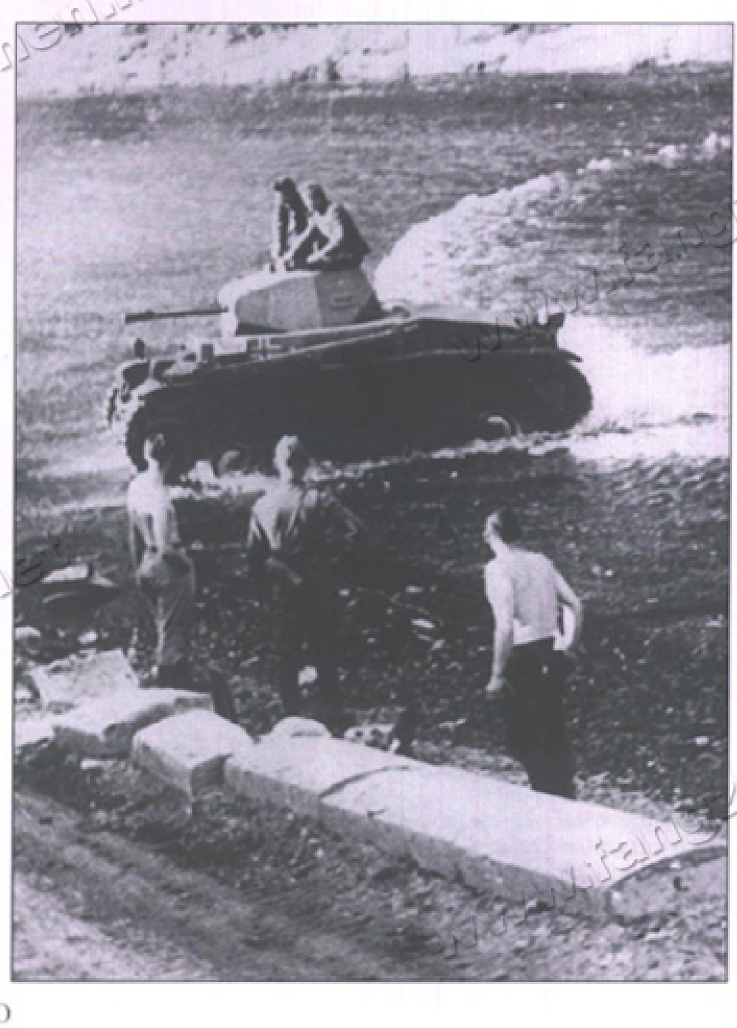




A Pz.Kpfw. II Ausf. c of 5.Panzer-Division enters the ruined town of Rouen in June 1940 during the final stages of the French defeat. The Dunkirk evacuation took 330,000 Allied troops to safety in early June, but all their heavy weapons were left behind. Paris fell on 14 June, and the French Government surrendered on the 22nd.

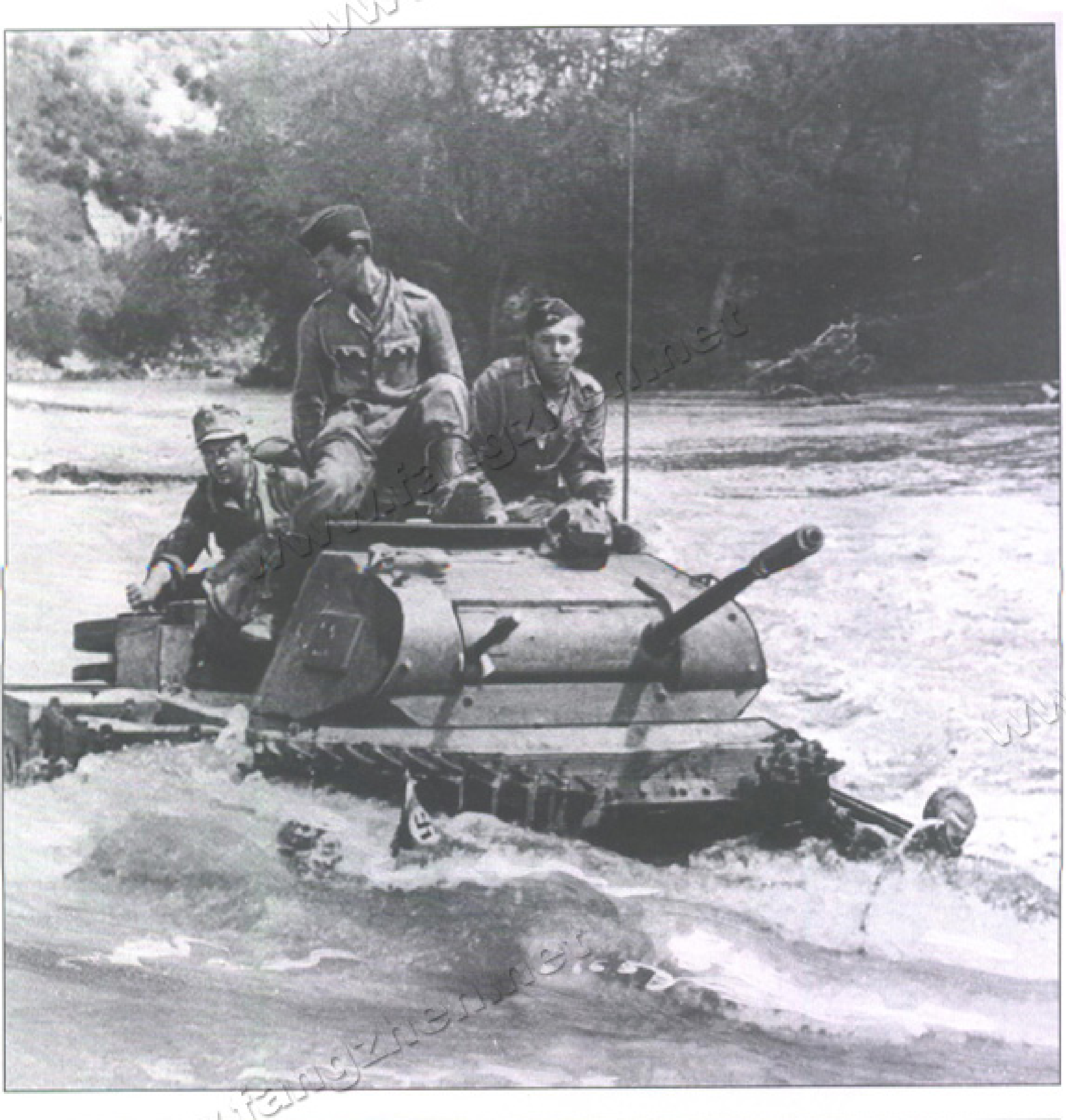


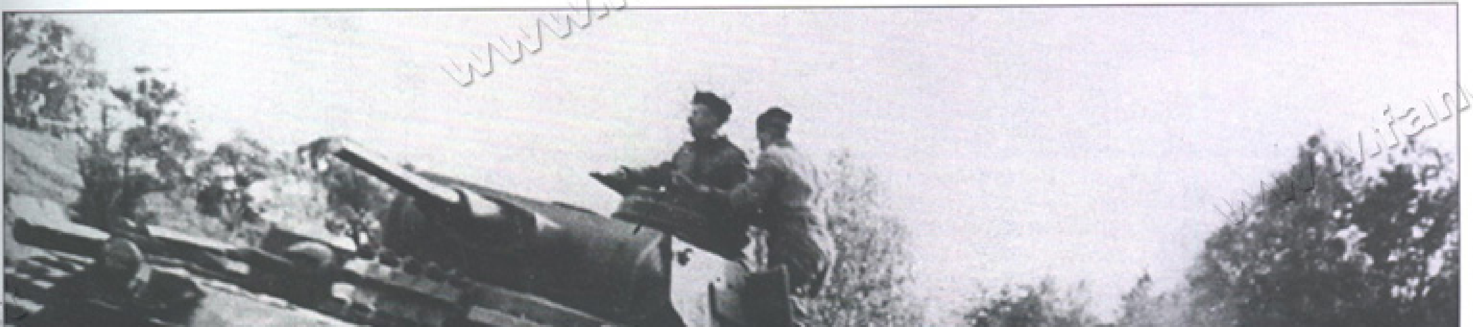
Here is one of the FT-17 tanks put into German service just after the end of the war against France in July 1940. The tank has been repainted in dark gray and is shown receiving a white national cross. These old tanks were renamed the Pz.Kpfw. FT-17 730(f) when they "joined" the German Army.



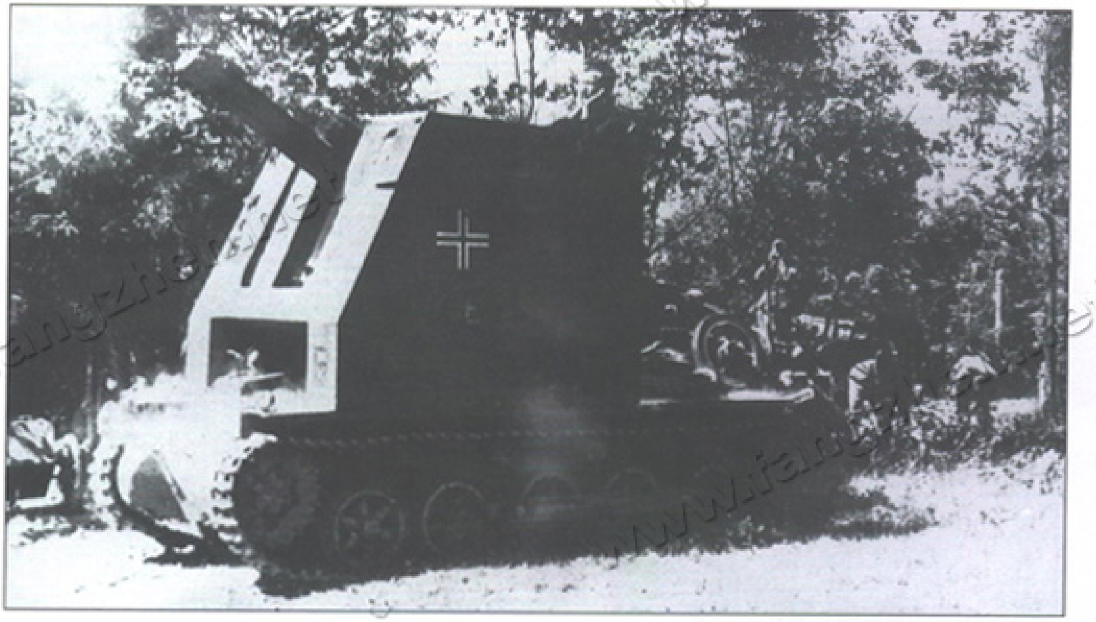
The Pz.Kpfw. II Ausf. a/b models were very old at the beginning of 1941 (the production ended in the beginning of spring of 1937), and had many thousands of kilometers registered on their odometers. Though their suspension was quite troublesome and they displayed a number of other weaknesses, they were used by front-line units during Operation "Marita". Here we see one of them crossing a river during the drive into Greece in May 1941.

Another Pz.Kpfw. II fords a river, this time at Larrisa, while entering the Balkan states. Note the small Nazi flag attached to the front part of the mudguard. Though this was rather uncommon, there are a few known photos showing such flags affixed to tanks during the first two years of war. There were six Panzer divisions involved in Operation "Marita" which were equipped with 843 tanks. Among them were only 260 Pz.Kpfw. IIs and an even smaller number of Pz.Kpfw. Is.



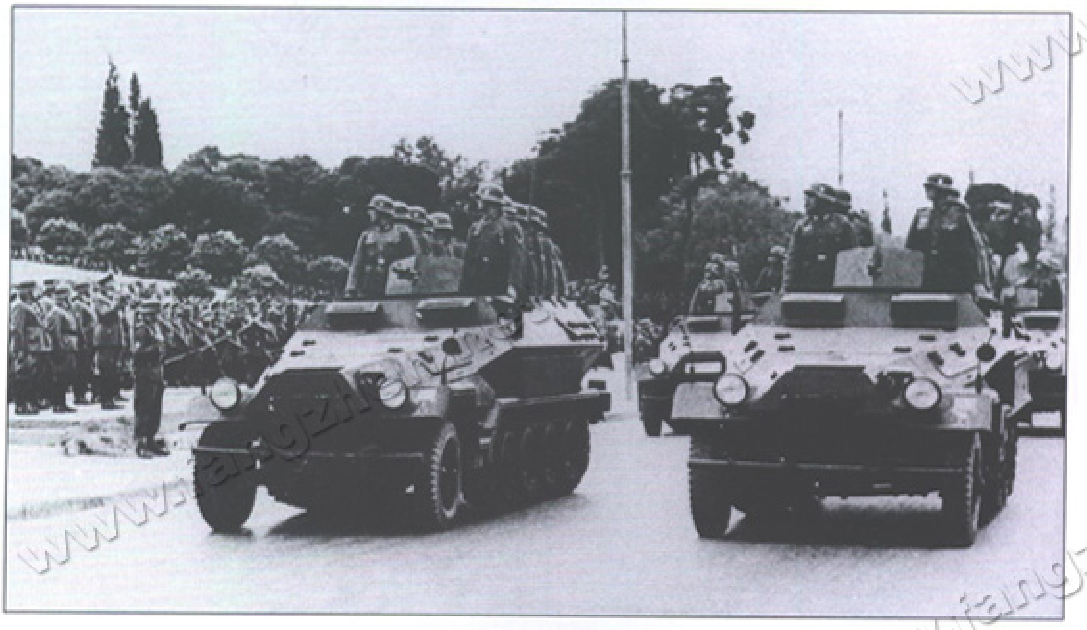


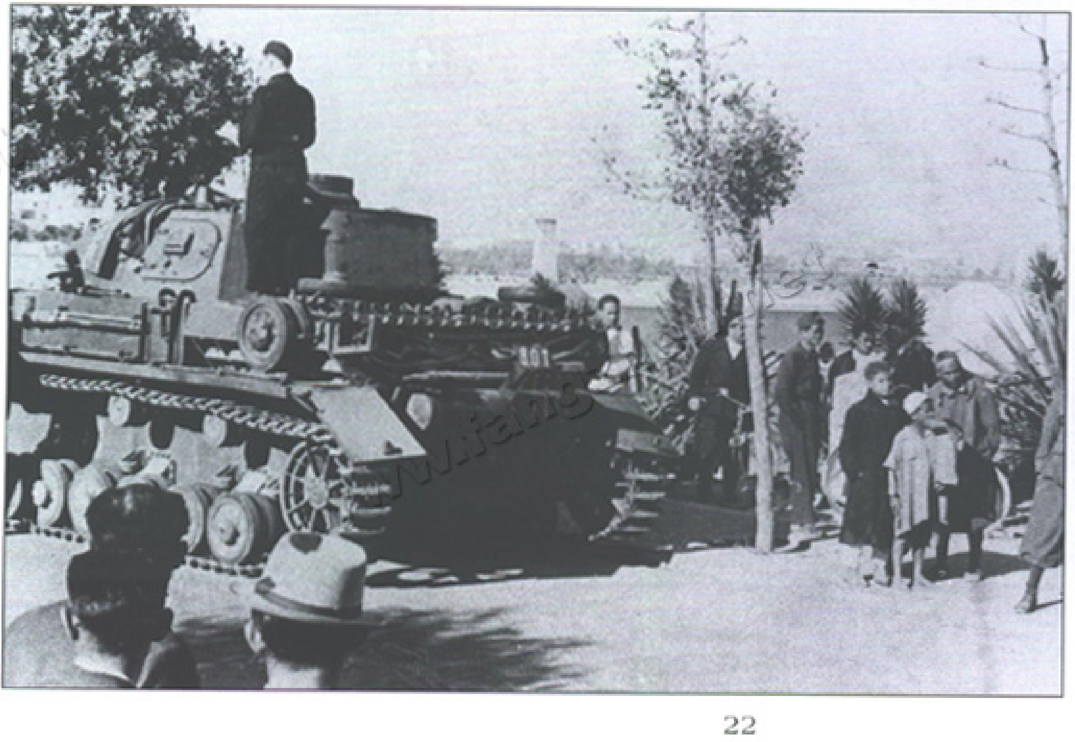
A couple of Pz.Kpfw. III Ausf. Js negotiate a river in Yugoslavia on their way to Greece. Both tanks are from the 6th company of Pz.Rgt.3 of 2.Panzer-Division. Each displays the typical emblem of this unit, the winged serpent painted on the shield-shaped white outline, which indicates the staff and 1st platoon of this company. The tactical number (probably "612") and national cross are painted below the turret. The Panzerwaffe lost around 60 tanks during one month of fighting in the Balkans, mostly due to mechanical problems.



The 15cm heavy infantry gun mounted on the Pz.Kpfw. I chassis was known as the sIG 33(Sf). This one was photographed while firing on a Greek position. The unit emblems painted on the front plate of the hull of the self-propelled gun indicate the 704th company of 5.Panzer-Division. Under the national cross the letter "E" is visible, which indicates the vehicle in the company. Thirty-eight of these self-propelled guns were converted in February 1940, just before the "Fall Gelb" operation, which was the first operation for this type of vehicle.

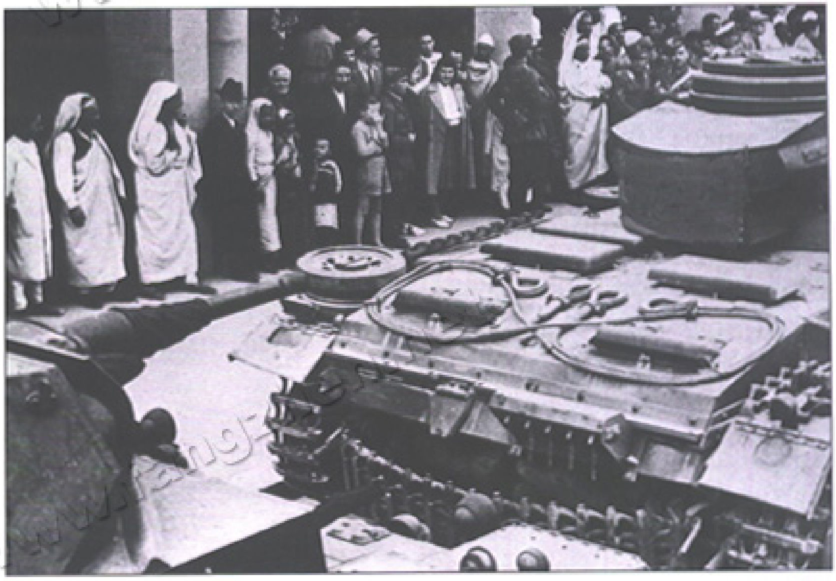
Following the conquest of Greece a victory parade was reviewed by Feldmarshall Wilhelm List in Athens on 7 May 1941. Note the tactical markings on the mudguards and the white national crosses barely visible on the side of the hulls of the Sd.Kfz. 251 Ausf. Bs.

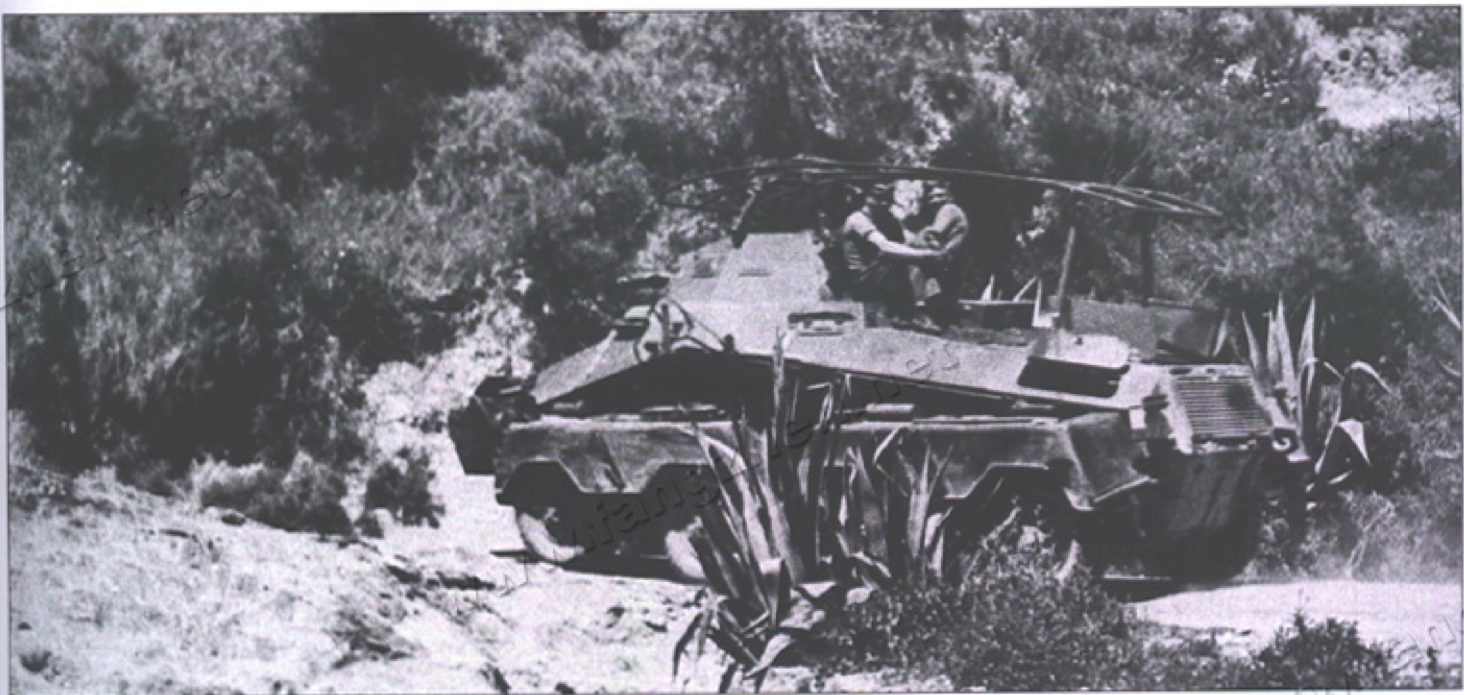




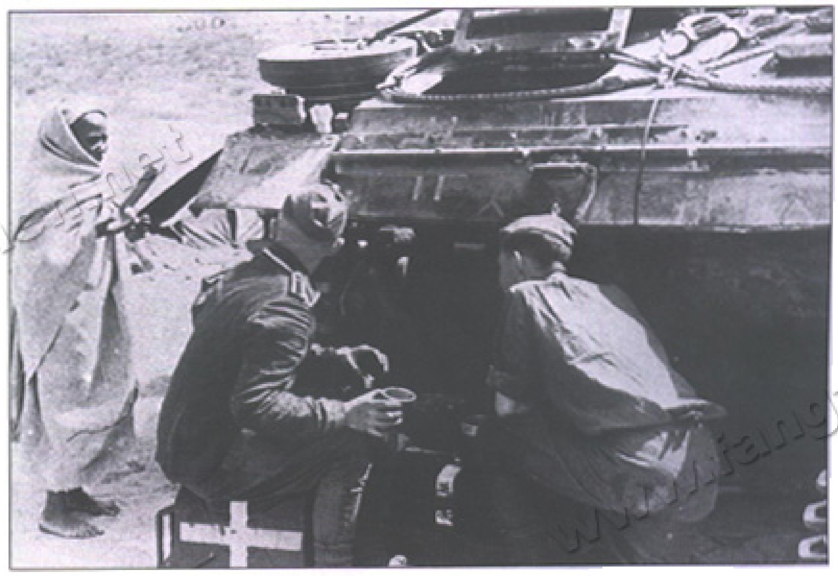
Before the Panzerwaffe's divisions were launched into the Balkan territories, armored troops of the DAK (Deutsche Afrika Korps) first landed in Africa. This Pz.Kpfw. IV was photographed in Tripoli just after arriving on 12 March 1941. It has a white tactical number "801" painted on a special piece of metal installed atop the smoke candle dischargers. All of the initial armored fighting vehicles sent to Africa were painted with the standard German camouflage, i.e., dark gray, which was later covered with dark sand paint.

A column of Pz.Kpfw. III Ausf. Hs from 5.leichte-Division are grouped on a street in a Libyan town in early spring 1941. This photo shows many of the details on the rear engine deck of this tank. The attachment of track links to the side and, particularly, front or rear of the hull of the tank had been a common practice since the spring of 1940, but it was widespread in early 1941, especially in Africa. The tactical number on the turret's bin, obliterated by censors, indicates the 3rd platoon in 5th company.

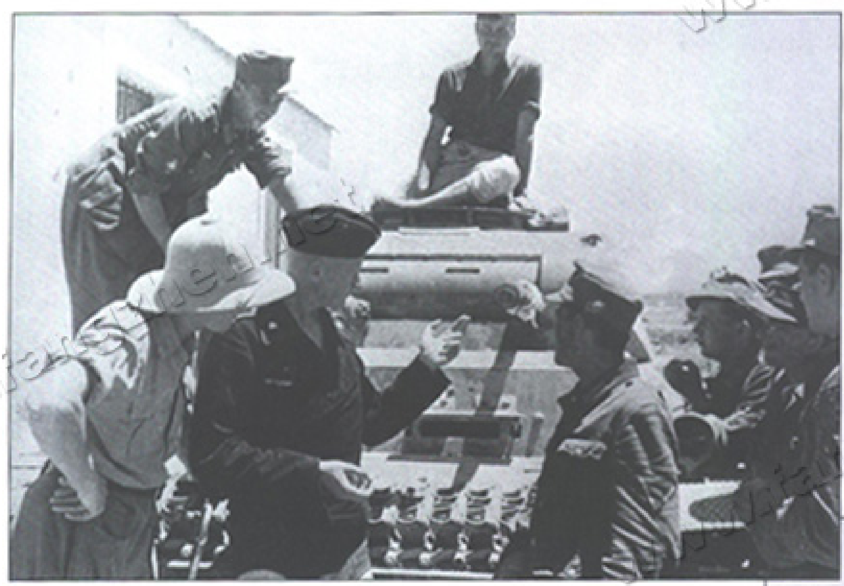




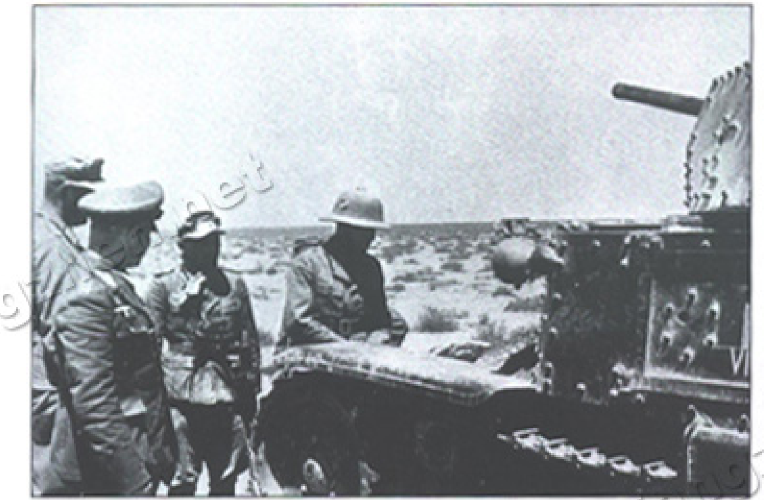
This photograph shows a Sd.Kfz. 232 heavy armored radio vehicle belonging to a staff unit traveling across a Libyan landscape in the spring of 1941. The DAK was very poorly prepared to fight in Africa and had to learn from its own experiences and mistakes. At the beginning of the campaign the vehicles were not equipped with tropical equipment and even had no camouflage, which would have been useful in the African desert. This armored car, like all other armored fighting vehicles, wears dark gray camouflage, which was replaced after a few months of fighting.



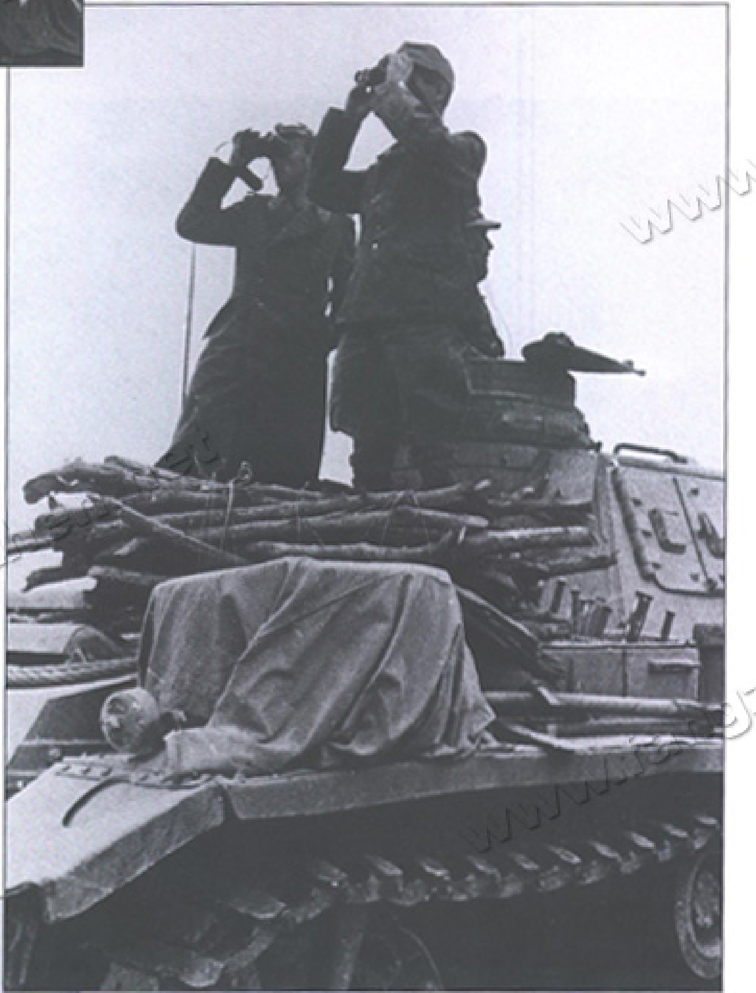
Tank crew members enjoy a minute of rest during the long trek across northern Africa. Taking an opportunity to get out from under the heat of the sun, they treat themselves to some water from a can marked with white cross. For these warriors, water and petrol (carried in cans without a white cross) were more valuable than gold. Note the divisional markings painted in yellow just to the right of the national cross, which indicates not the 5.leichte-Division, but the previous owner of Pz.Rgt.5, 3.Panzer-Division.



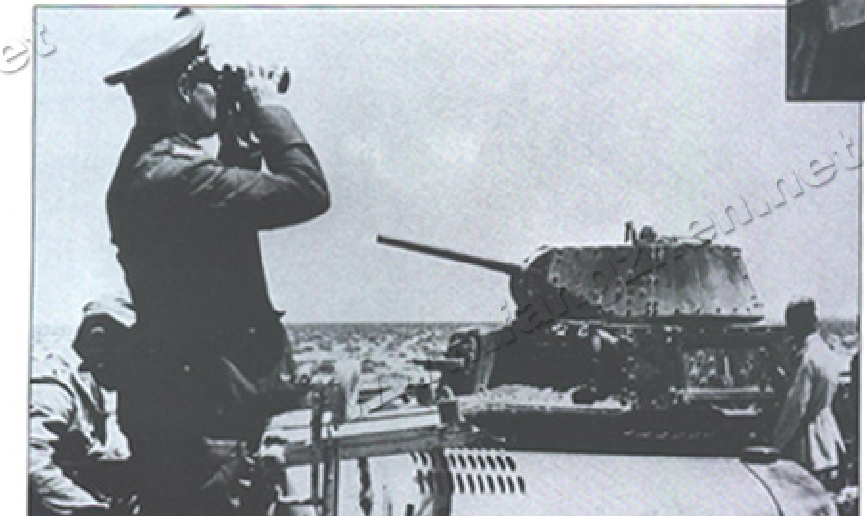
The commander of a tank crew explains the details of tank service in Africa to a group of mountain soldiers. The tank is a Pz.Kpfw. II painted with the sand paint. Of special interest is the uniform of this NCO — he wears the standard black tanker blouse, black field cap and . . . bathing trunks!



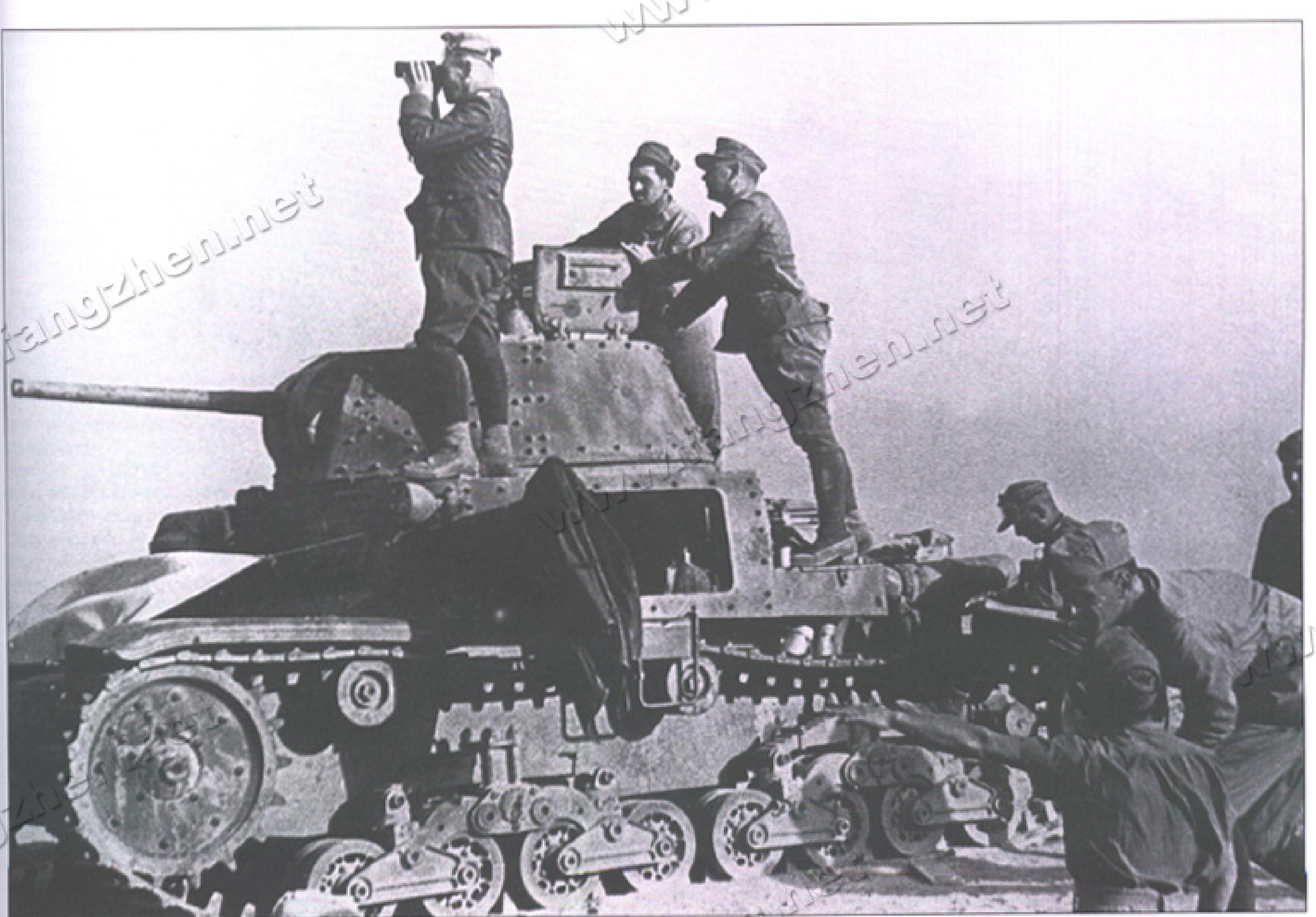
A photo of Rommel inspecting an M13/40. The markings of this Italian armored unit are clearly visible; they indicate the 7th vehicle in the 1st platoon, probably belonging to 1st company.



The first clash with British forces took place one month after the arrival of the DAK in Tripoli. During the following weeks the Germans captured hundreds of POWs and weapons. Here a pair of German officers study a battlefield from a Pz.Kpfw. III equipped with bundles of sticks. Note the spare wheel bolts stuck into the cover of the engine inlet.

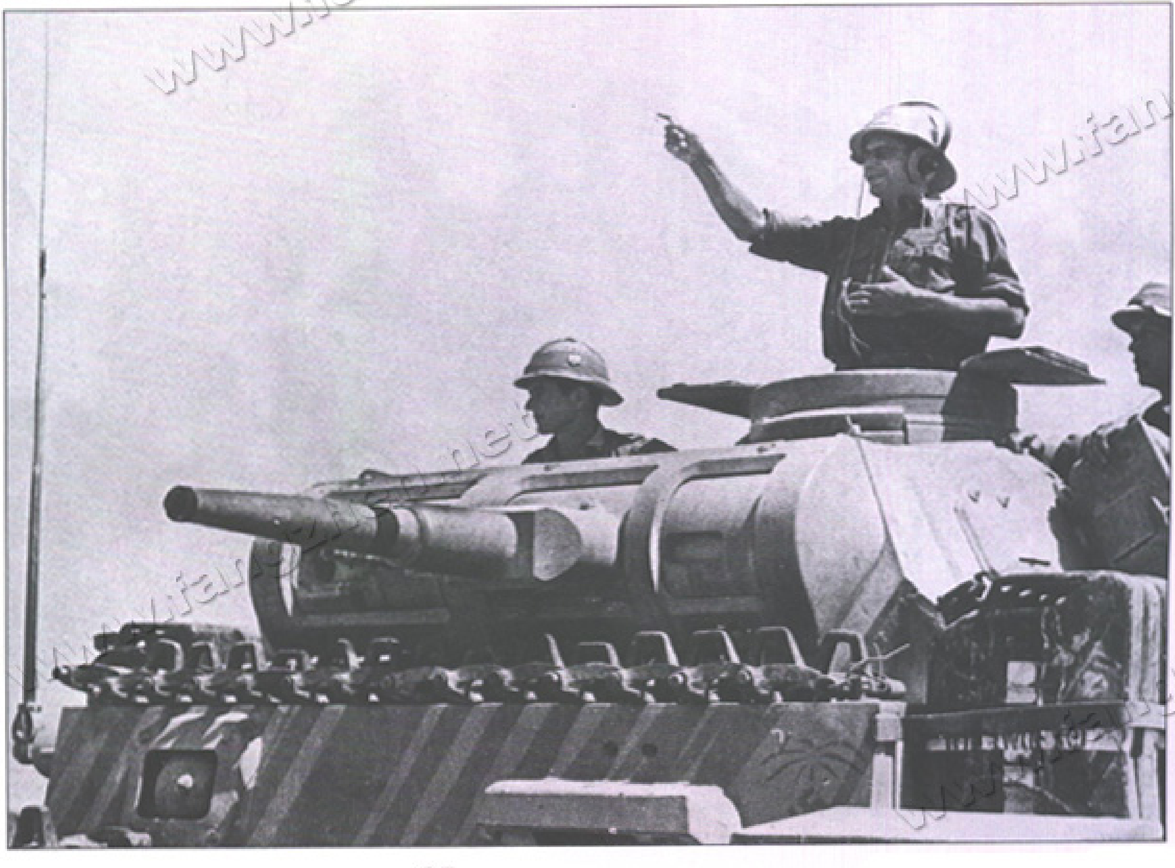


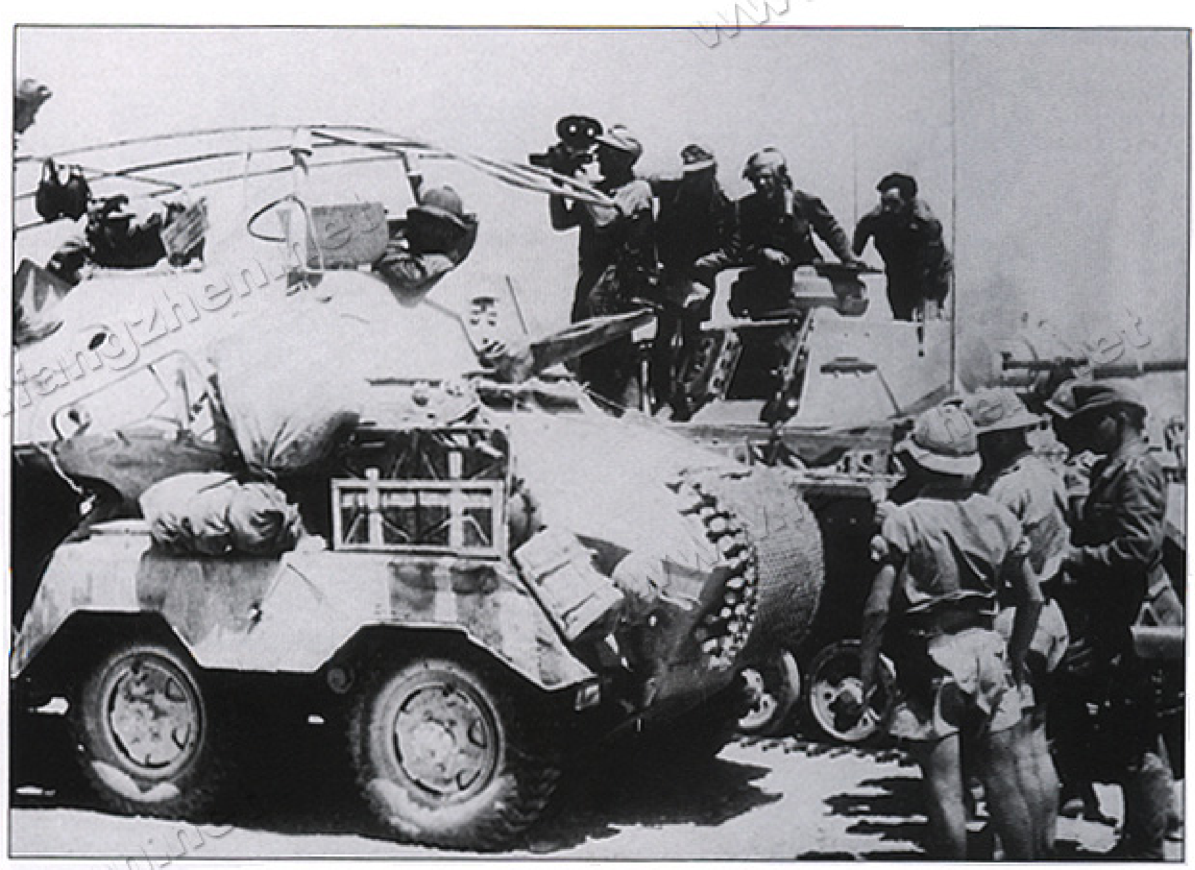
The legendary General Erwin Rommel surveys a battlefield littered with knocked-out Italian M13/40 light tanks in June 1941. Note that Rommel's vehicle carries a heavy coat of sand paint over the previous dark gray camouflage.



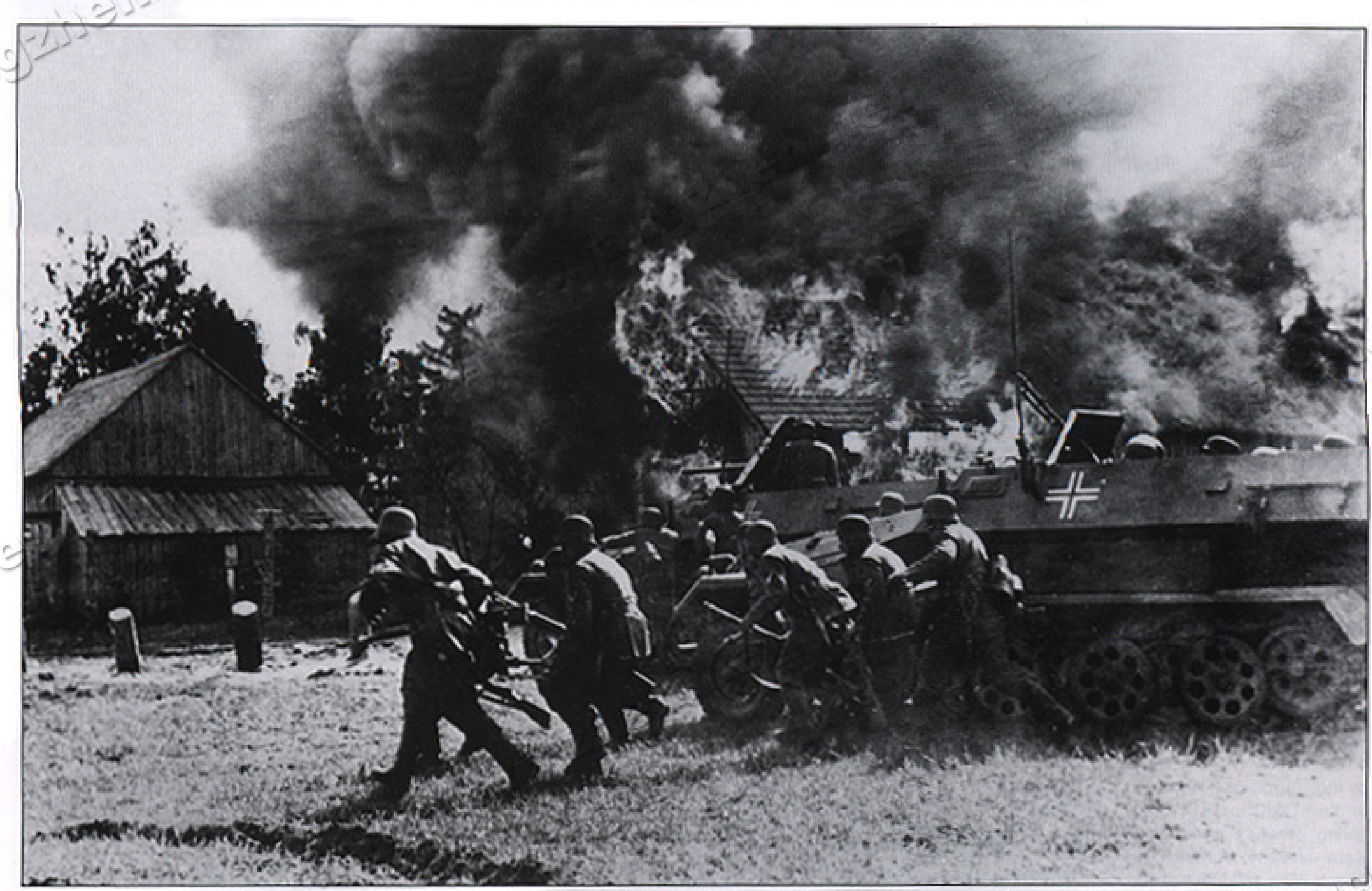
This photo shows another tank from a different Italian armored sub-unit. It is covered with a light-colored canvas for easy identification. Standing on the superstructure, Erwin Rommel uses binoculars to take a closer look at the enemy. Though there were some problems with German-Italian cooperation — the limited power of the Italian Army and the supporting role of their armored units in Africa — the Italians were useful to Rommel because they filled his front-line ranks and enabled him to make successful use of his DAK Panzers.

Another famous officer of the DAK was the Ritterkreuz (Knight's Cross) winner Oberstleutnant Kümmel, known as "Der Lowe von Capuzzo" (The Lion of Capuzzo) after the combat of August 1941. In this photo we see him giving orders from the turret cupola of a Pz.Kpfw. III. Like all DAK tanks, it is heavily equipped with additional tracks, spare wheels and jerry cans filled with petrol and water. Note the DAK emblem painted on the sand camouflage on the front plate of the superstructure. This paint, RAL 8000, was officially called yellow-brown by the Germans. It was sent to the DAK units in late spring of 1941 when they were already fighting the British. The delivery of the paint was not a high priority, so the armored fighting vehicles of the DAK wore dark gray camouflage for quite a long time after the summer of 1941.

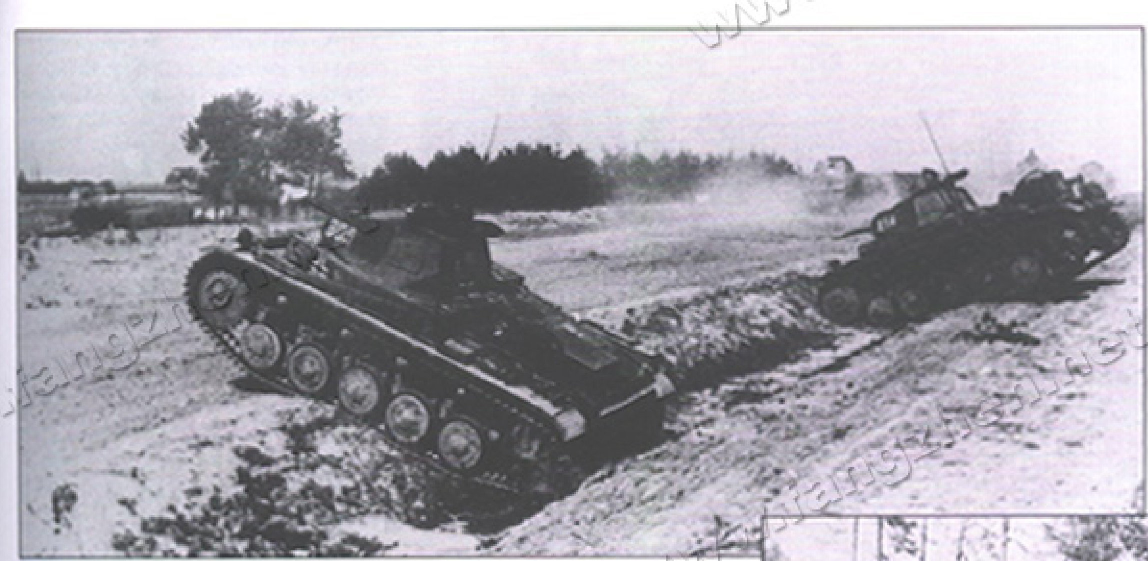




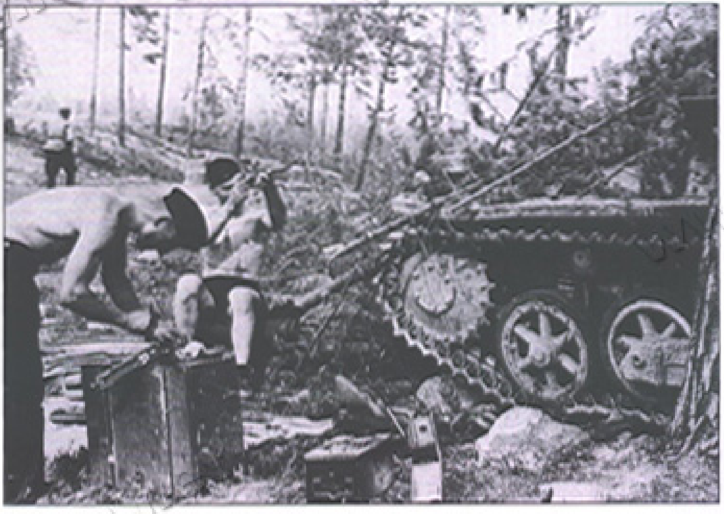
The communication version of the Sd.Kfz. 231, which was called the Sd.Kfz. 263, was modified by eliminating the turret and adding a telescope antenna to the standard frame antenna. This armored car was equipped with a better radio system than the earlier combat version, the Sd.Kfz. 232, so it was much more appreciated by the staffs. Here we see one of these vehicles during a meeting between the crew of a Pz.Bef.Wg. III and the Deutsche Wochenschau team. The Sd.Kfz. 263 has been repainted by its crew with sand paint (RAL 8000) with the use of a spray gun, which was most uncommon in the desert. Due to this style of painting the national cross is outlined with a background of dark gray camouflage and the tires are partly covered with sprayed paint.



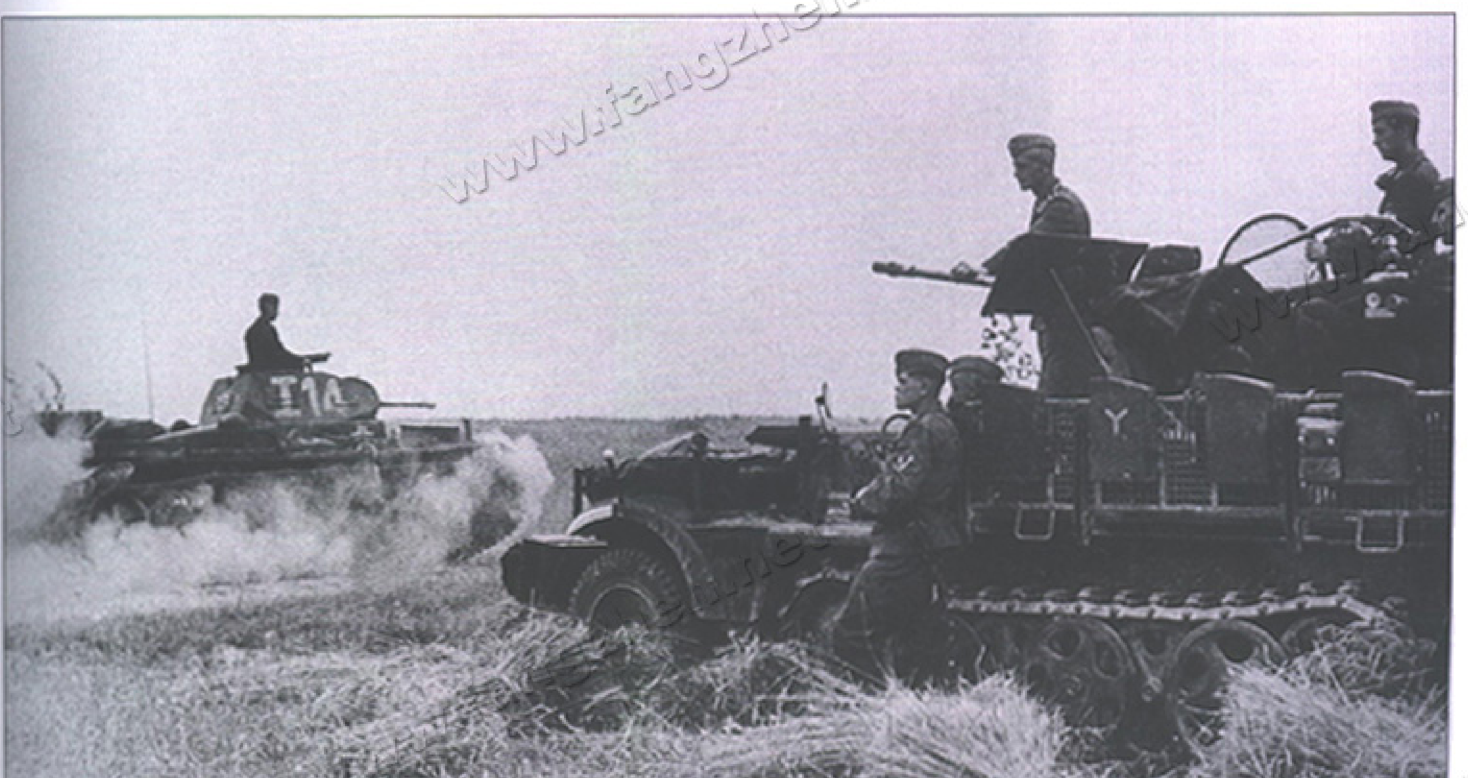
In June 1941 a large number of Panzerwaffe forces opened the long and difficult offensive against the Soviet Union. From the beginning of this operation the German armored units had overwhelmed their new enemy with the same speed and superior tactics they had employed previously (and would employ later in the war) on all fronts. One of the main reasons for the success of the German armored divisions in the Soviet Union was the use of armored personnel carriers, which gave the German grenadiers superiority over Soviet infantry during their attacks. This photo shows a typical charge of a Panzerwaffe unit into a burning village. Both of the vehicles seen in the photo are Sd.Kfz. 251 Ausf. Bs, including the Sd.Kfz. 251/10 in the background, which is armed with a 3.7cm PAK gun.



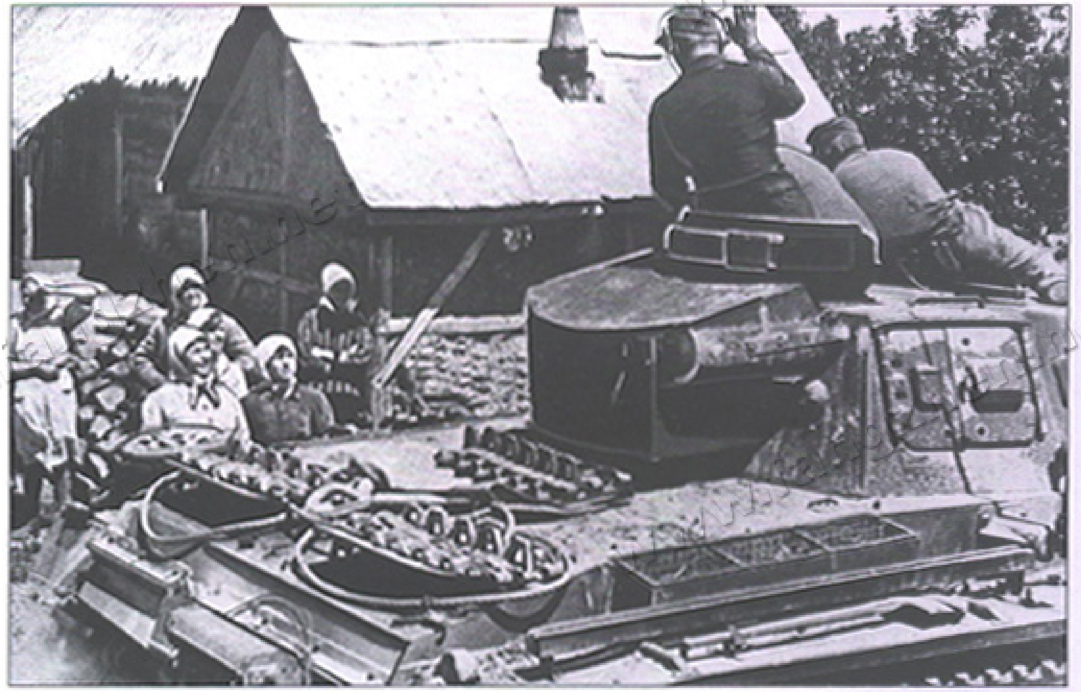
Two Pz.Kpfw. IIs from 13.Panzer-Division, which was placed under the command of Pz.Gr.1 of Heeresgruppe Süd, negotiate a ditch by a road on their way to Rostov in July 1941. The division had 149 tanks, including 45 Pz.Kpfw. IIs. Note the markings of both tanks. The Pz.Kpfw. II in the background wearing the tactical number "II14" was used by the staff of II.Abteilung. The nearest tank is marked with the tactical number "805" and a yellow divisional sign near the black and white national cross.



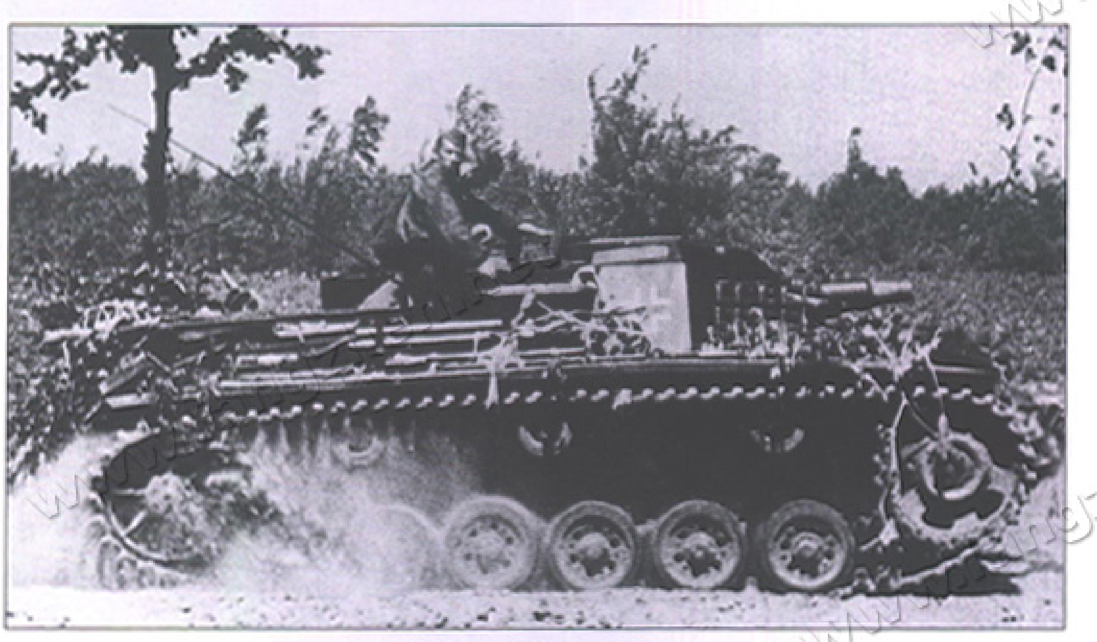
A Pz.Kpfw. I from Pz.Abt.z.b.V.40 undergoes repairs in Finland in August 1941. The unit was composed of three companies, each equipped mainly with Pz.Kpfw. Is and supported by Pz.Kpfw. IIs. It was one of only two small, weak armored units employed in the extreme northern sector of the Eastern Front.



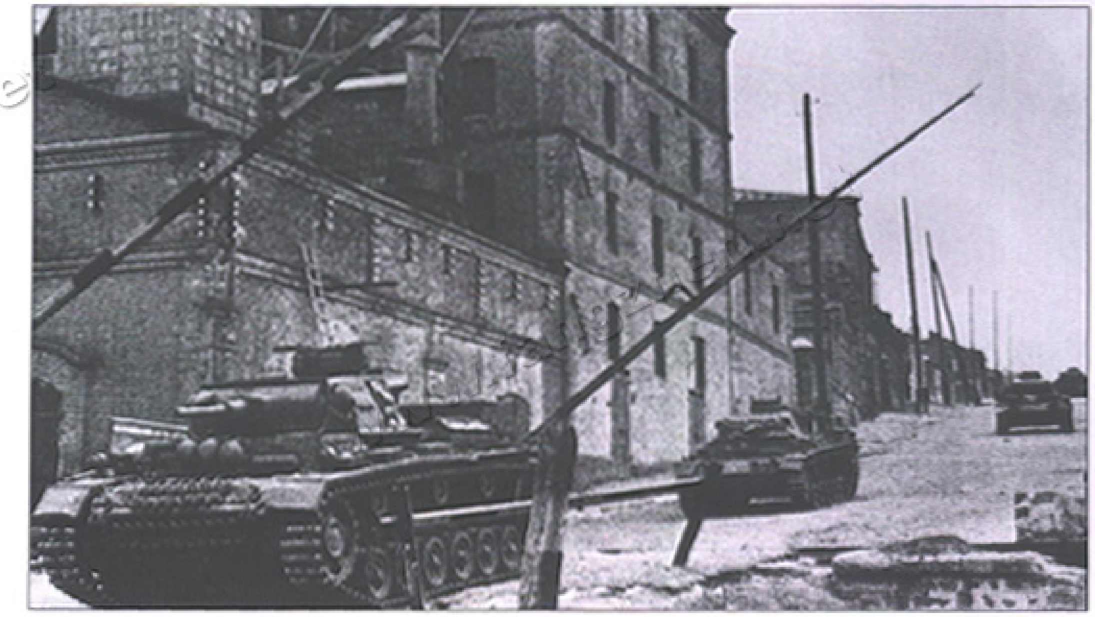
The Germans began Operation "Barbarossa" with 17 Panzer divisions, including 7.Panzer-Division, which belonged to XXXIX Pz.Kp. of Pz.Gr.3 in Heeresgruppe Mitte. The photo shows a Sd.Kfz. 10/4 anti-aircraft vehicle and a Pz.Kpfw. II from this division during an operation in Belorussia in August 1941. Note the divisional marking on the Sd.Kfz. 10/4's ammo box and the colorful markings on the turret of the Pz.Kpfw. II. They are more typical of combat in France in 1940. The "I14" indicates the 14th staff vehicle of the I.Abteilung of Pz.Rgt.25.



Panzer crewmen of a 7th Panzer company extend greetings to some Ukrainian peasants in July 1941, a time when many people on both sides thought that there could be friendly relationships between them. Based on the details visible on the engine deck of the tank seen in the photo, it appears to be one of the 600 Pz.Kpfw. III Ausf. Gs produced up to February 1941. Like most German tanks of this period, this Pz.Kpfw. III is fitted with smoke candle dischargers.

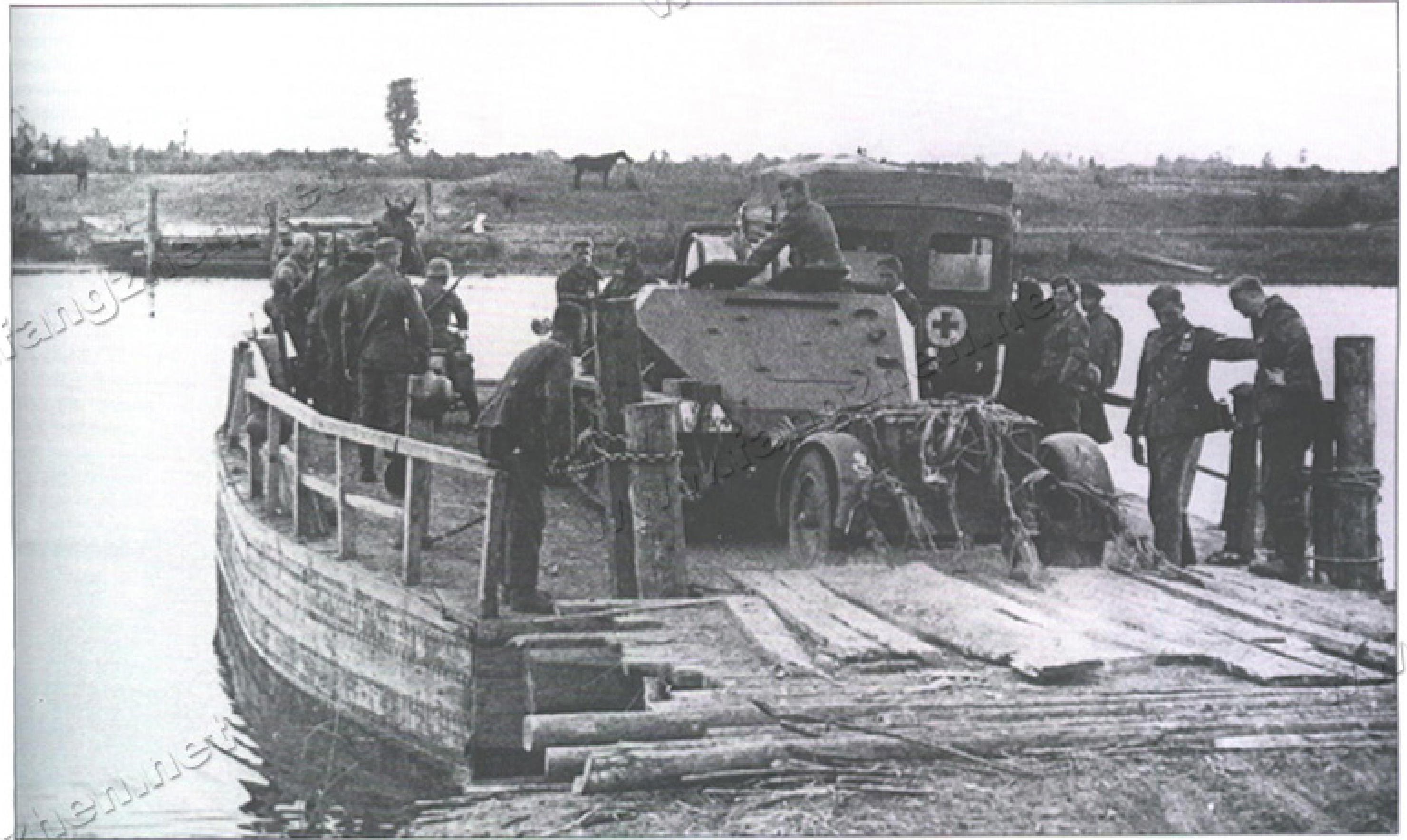


A StuG III Ausf. B from the StuG.Abt. belonging to SS Division "Leibstandarte Adolf Hitler" travels down a Ukrainian country road in August 1941. Batteries of StuGs were used not only by all bigger SS units, but also by "Großdeutschland" for infantry support during attacks.

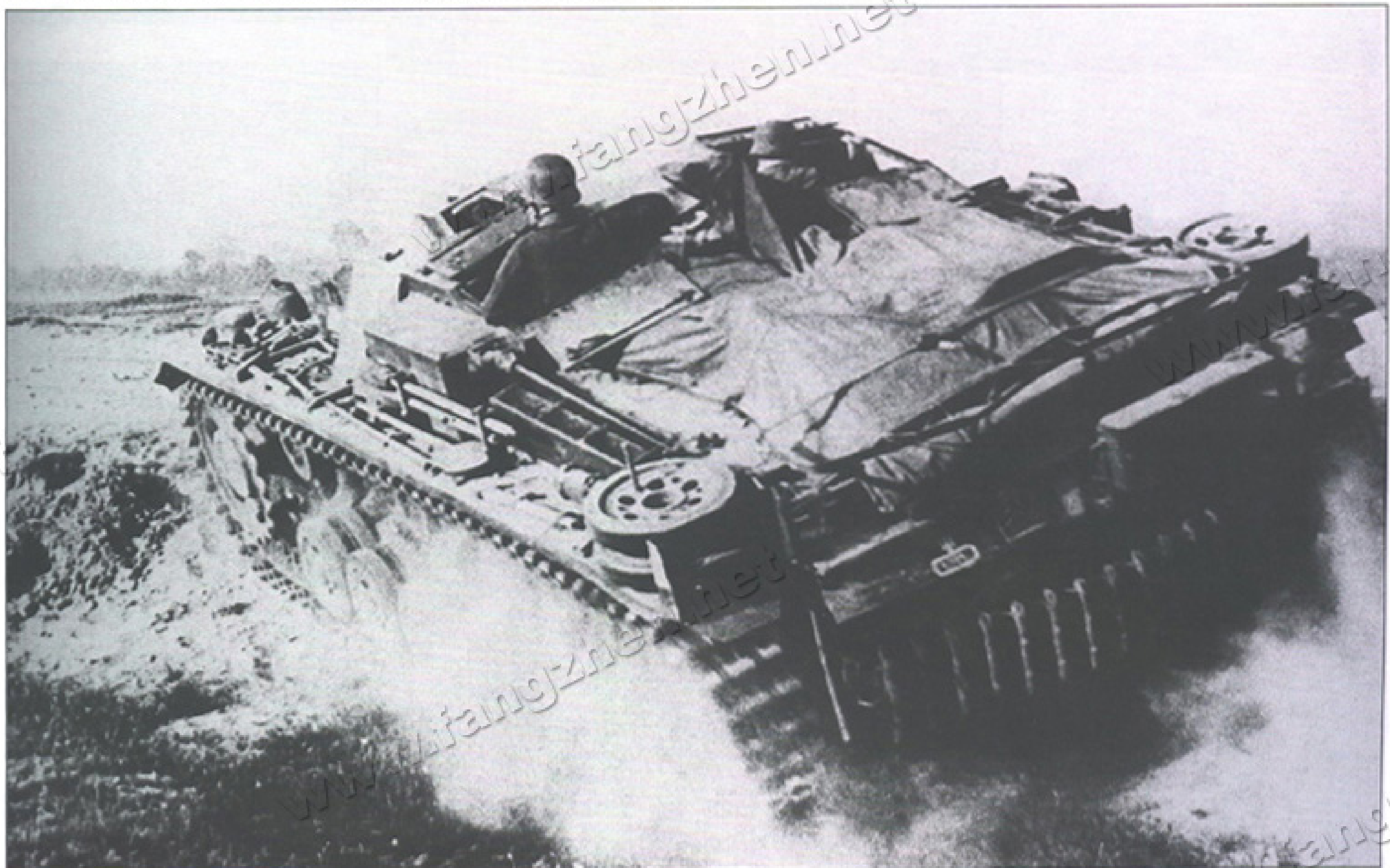


A platoon of Pz.Kpfw. IIIs led by a Tauchpanzer III, probably from 16.Panzer-Division, is seen in this shot traveling down a street in Rostov, a typical Soviet city of that era. Rostov was one of the main objectives of Heeresgruppe Süd, which launched its three divisions of Pz.Gr. 1 to crush enemy defense lines in the autumn of 1941. Note that the helmets hanging on the front plate of the superstructure are being used as additional armor.

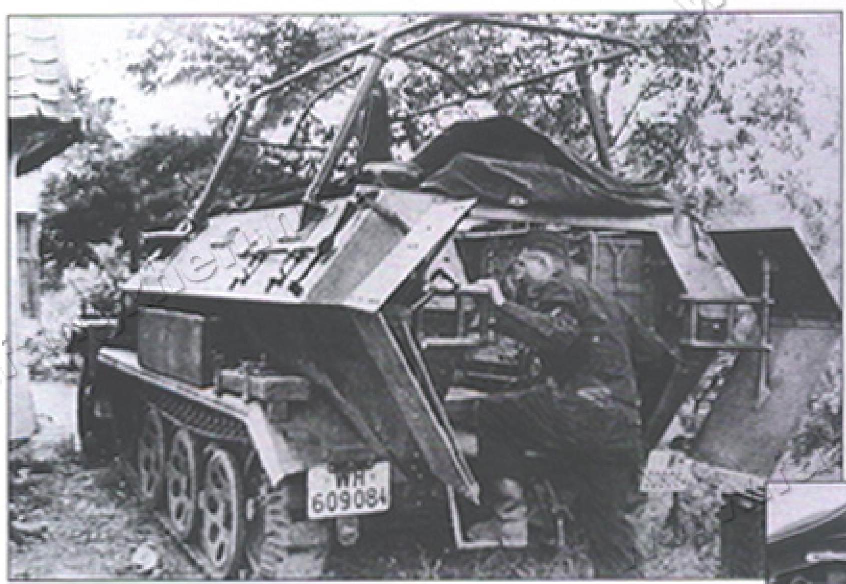
www.mingzhen.net



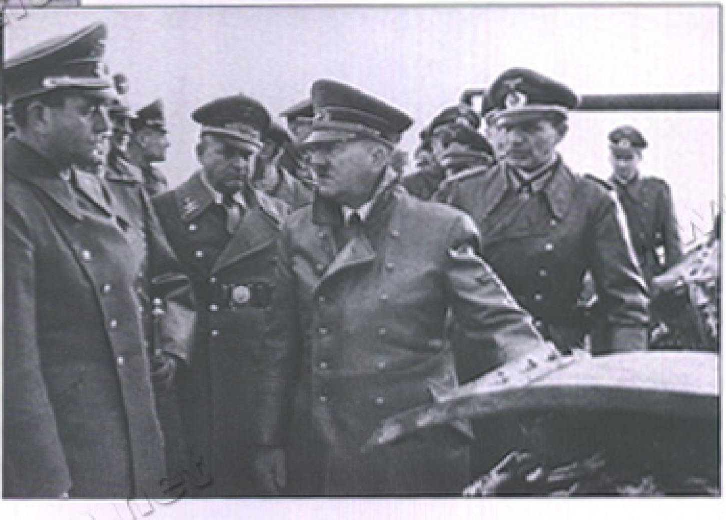
A Sd.Kfz. 252 from a battery of self-propelled howitzers (probably a sIG 33 battery) crosses a river in the Smolensk area in September 1941. The Sd.Kfz. 252 was a half-track armored ammunition carrier built in the same manner as the Sd.Kfz. 250 armored personnel carrier.



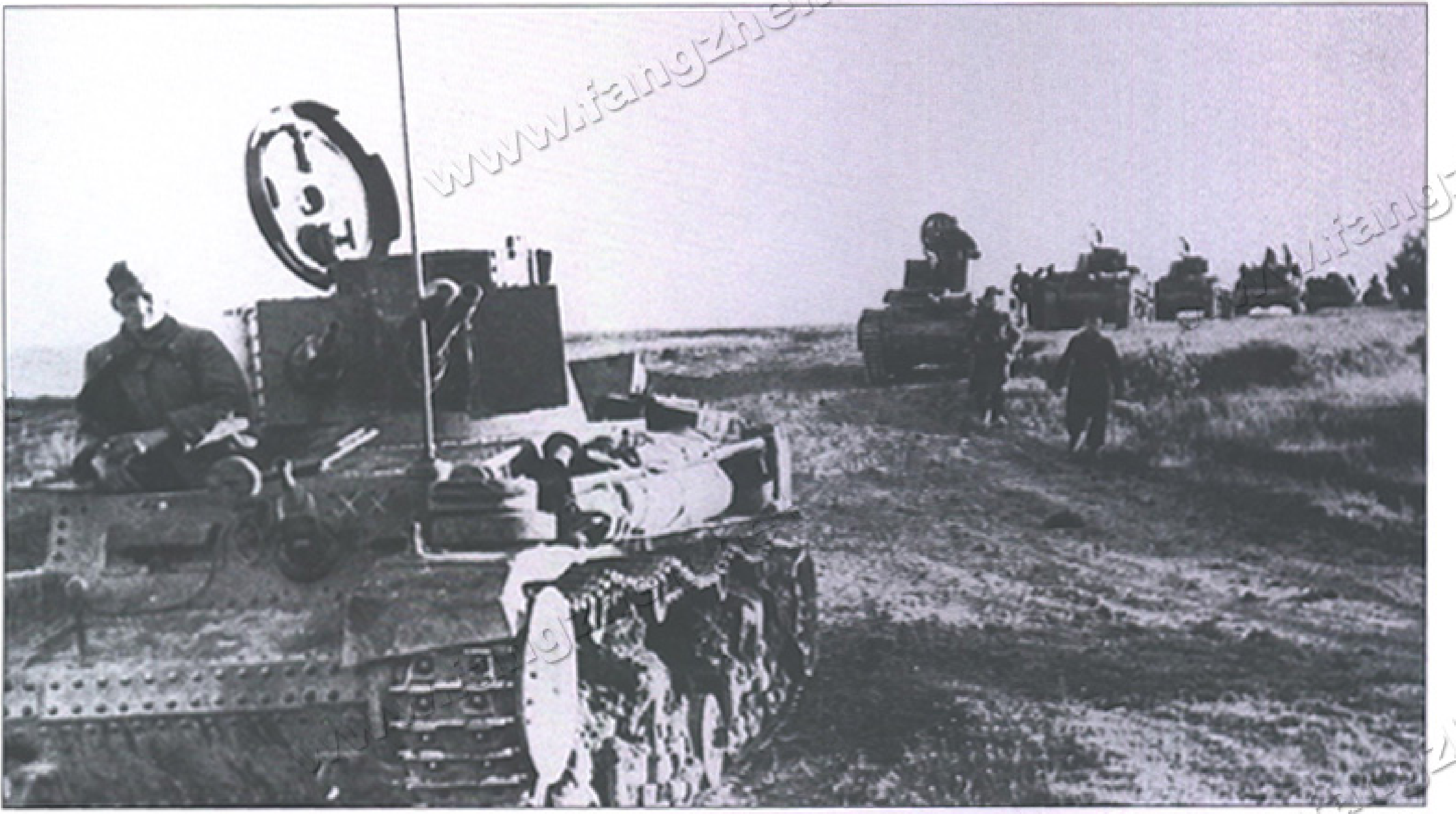
This StuG III Ausf. B from StuG.Abt.203 is advancing across uneven Soviet terrain. Note the markings on the rear of the StuG. The white tactical sign of a self-propelled gun unit has the code "1/203" inside of it, indicating the 1st company in the unit. The marking next to it is the remains of a white letter "A" (it was painted over by the military censors) indicating the first battery in a company. Next is probably the unit emblem. A white road sign appears on the right mudguard.



The open doors of this Sd.Kfz. 251/6 Ausf. B command vehicle provide a good view of its radio compartment. Vehicles of this type were very often equipped with "Enigma" radio equipment, which enabled the staffs to better command the Panzerwaffe units and helped to achieve surprise over the enemy by coordinating the maneuvering and speedy concentration of troops. Superior communication of information on the battlefield was one of the main reasons for the success of the Panzerwaffe in the early part of the war.

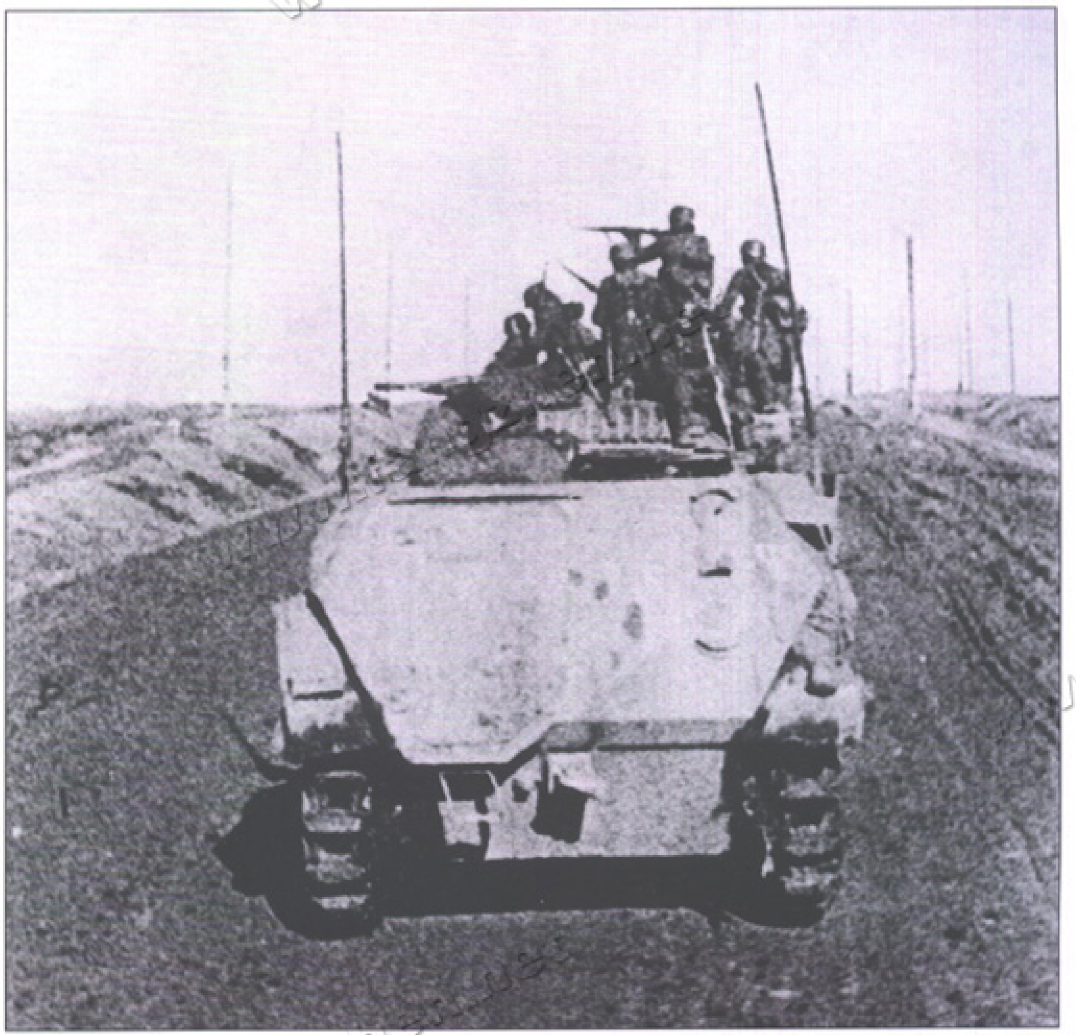


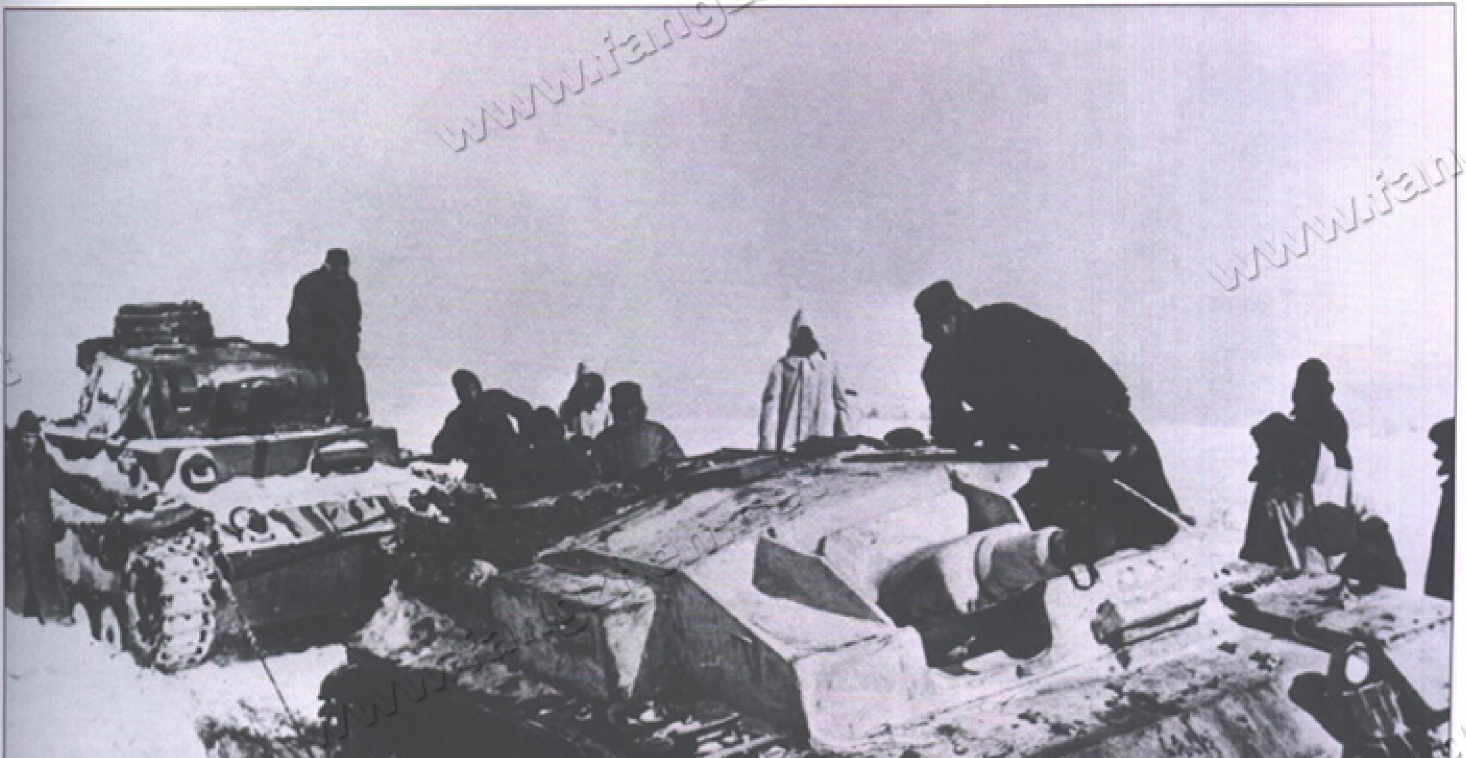
The Germans captured many Soviet tanks during the campaigns in the East. Among them was this T-26 tank, which Hitler and his officers are inspecting on a testing ground during the winter of 1941/42. From left to right are: Speer, Saur, Hitler and Oberst Holzhamero, who has been decorated with the Ritterkreuz.



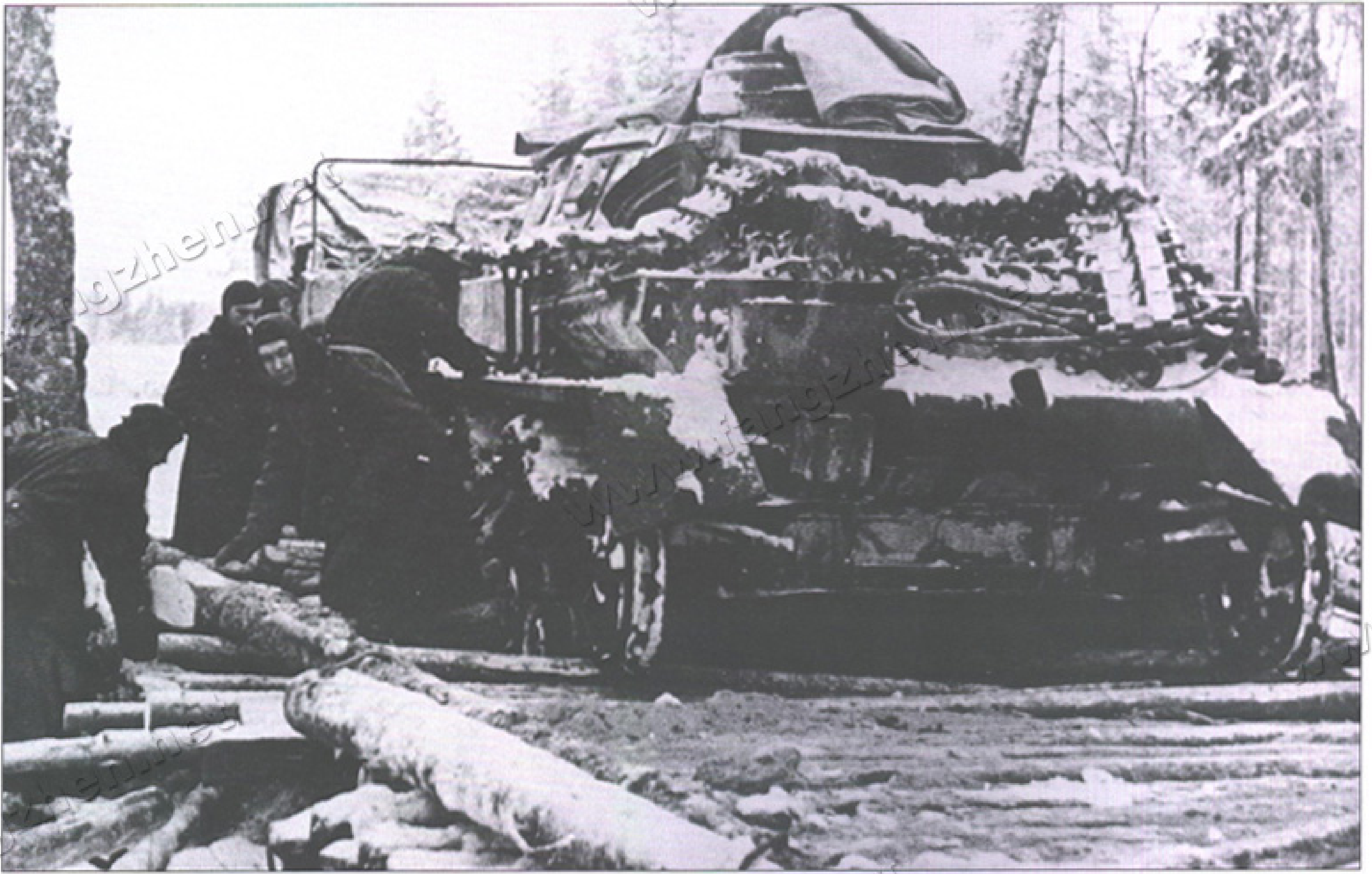
In preparation for the advance on Moscow in October 1941, the weakest division of Pz.Gr.4, 6.Panzer-Division, which was equipped with almost 100 Pz.Kpfw. 35(t) tanks, was taken over by Pz.Gr.3. During the October battles the division lost 27 Pz.Kpfw. 35(t)s. Another 41 broke down and were still in need of repair at the end of the month. Nevertheless, the unit was utilized by Pz.Gr.3 command until the end of the year, when all tanks of this type had been lost, mainly due to technical breakdowns of the chassis. One of the tanks that did not survive 1941 is shown here leading a column during the last warm days of October. Note the divisional sign painted in yellow on the front plate of the superstructure.

As in previous months, the main goal for armored units in October 1941 was to acquire as many advanced positions behind enemy lines as possible. Therefore, armored columns usually did not engage in combat with the enemy, but continued to break his defense by smashing areas of concentration. This photo, then, illustrates the typical mode of combat for the time, with the Germans exchanging fire as they advance toward the east. Note the color of this Sd.Kfz. 250/3 radio half-track. Almost completely covered with a heavy coat of mud, it is more a light sand-gray color than the standard dark gray. On the right rear of the vehicle is a tactical sign indicating a towed howitzer unit. Of special interest is the antenna at the right side of this Sd.Kfz. 250/3; it was usually installed on the left side.

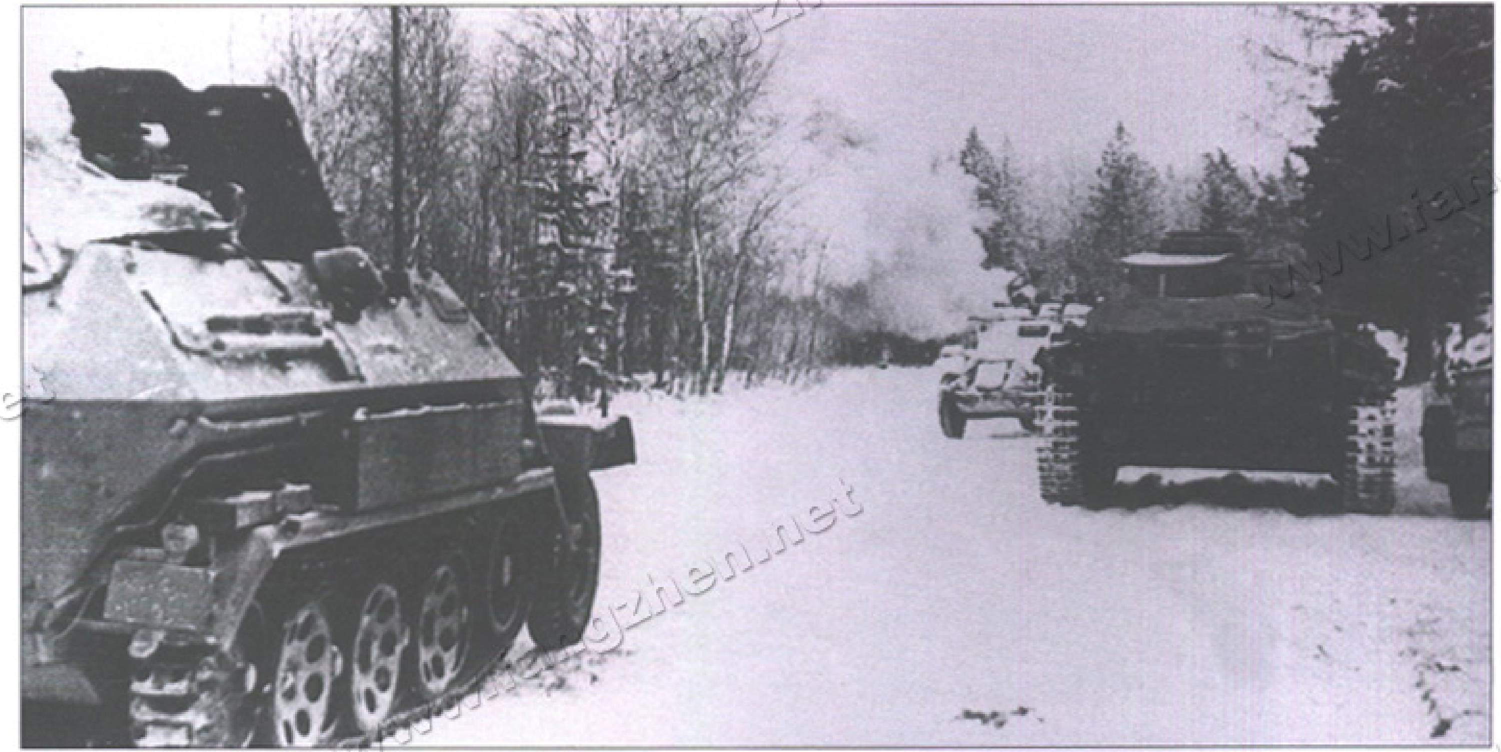




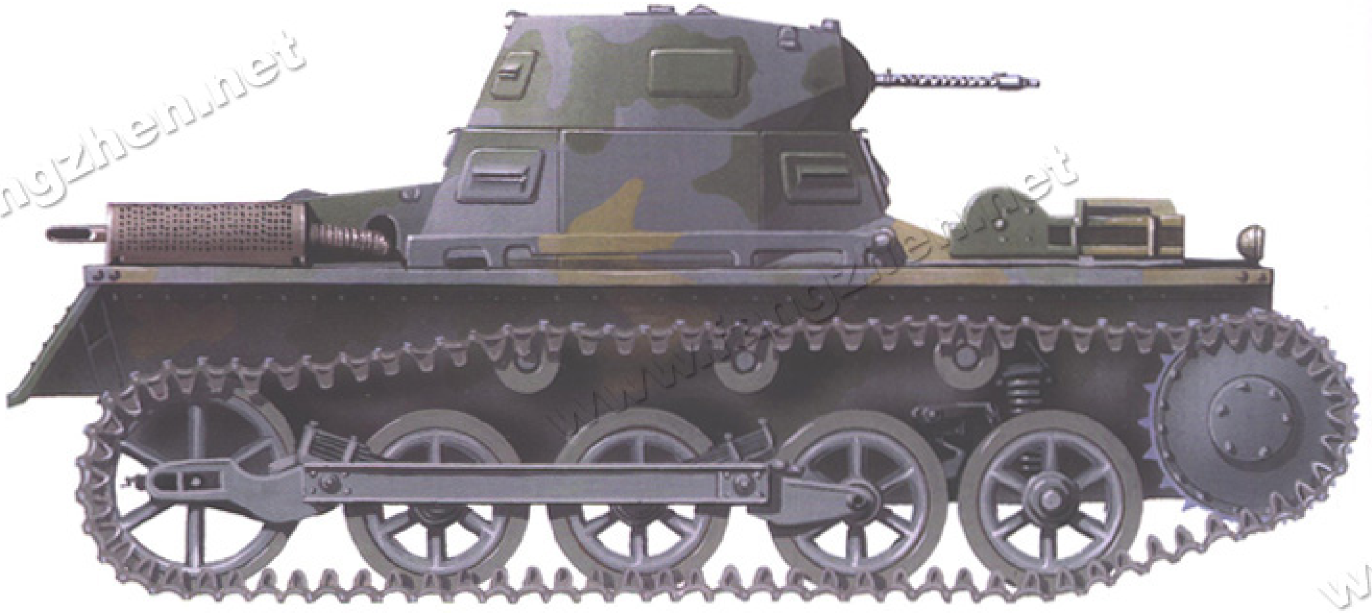
A StuG III Ausf. E bogged down in the snow is recovered by a Pz.Kpfw. III somewhere in the Demyansk area. The StuG III, which is named "Leopard", belonged to StuG.Abt.184. Almost all the crews in that unit nicknamed their StuGs after wild animals. StuG.Abt.184 was involved in combat in the central part of the Eastern Front during the winter of 1941/42.



Another recovery mission, this time accomplished by a heavy tractor in difficult forest terrain. The Germans tried to tow the Pz.Kpfw. IV on a specially prepared platform built of logs, but some of them were too weak and broke under the weight of the tank, blocking the last two road-wheels. Many similarly damaged tanks were abandoned by the Germans during the great winter retreat of 1941/42 due to a lack of fuel, tractors and time.

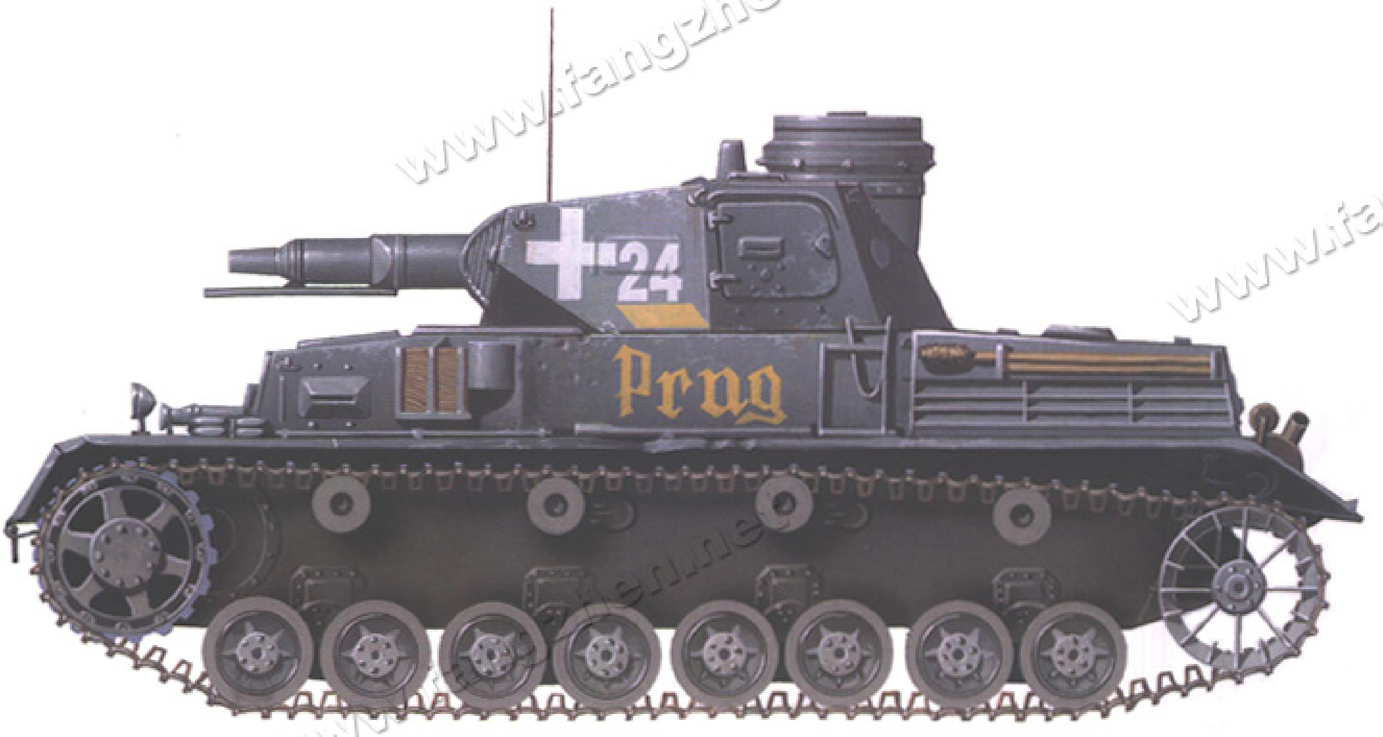


Fighting in the Russian forests proved to be very difficult for the Panzerwaffe divisions because of the lack of sufficient roads. Usually one wide road was available in a given part of a forest, and the divisional commander had no other choice but to struggle with the enemy in frontal combat until he broke his resistance. Here is an example of such a situation. A Sd.Kfz. 251/10 with a 3.7cm PAK gun is at the extreme left of the photo, while at the right is a Pz.Kpfw. III. The tank is decorated with the marking of a shield almost in the center of the vehicle's rear. On the original print one of these markings, seen in the top right corner of this shield, looks like a trident, which could indicate 2.Panzer-Division. Note that the white bar on the stowage bin behind the turret of the Pz.Kpw. III. was also applied to the vehicle to the right of the tank, but the bar is smaller. It may indicate the staff of I.Abteilung. Visible in the background is a retreating Sd.Kfz. 222 carefully covered with white paint.



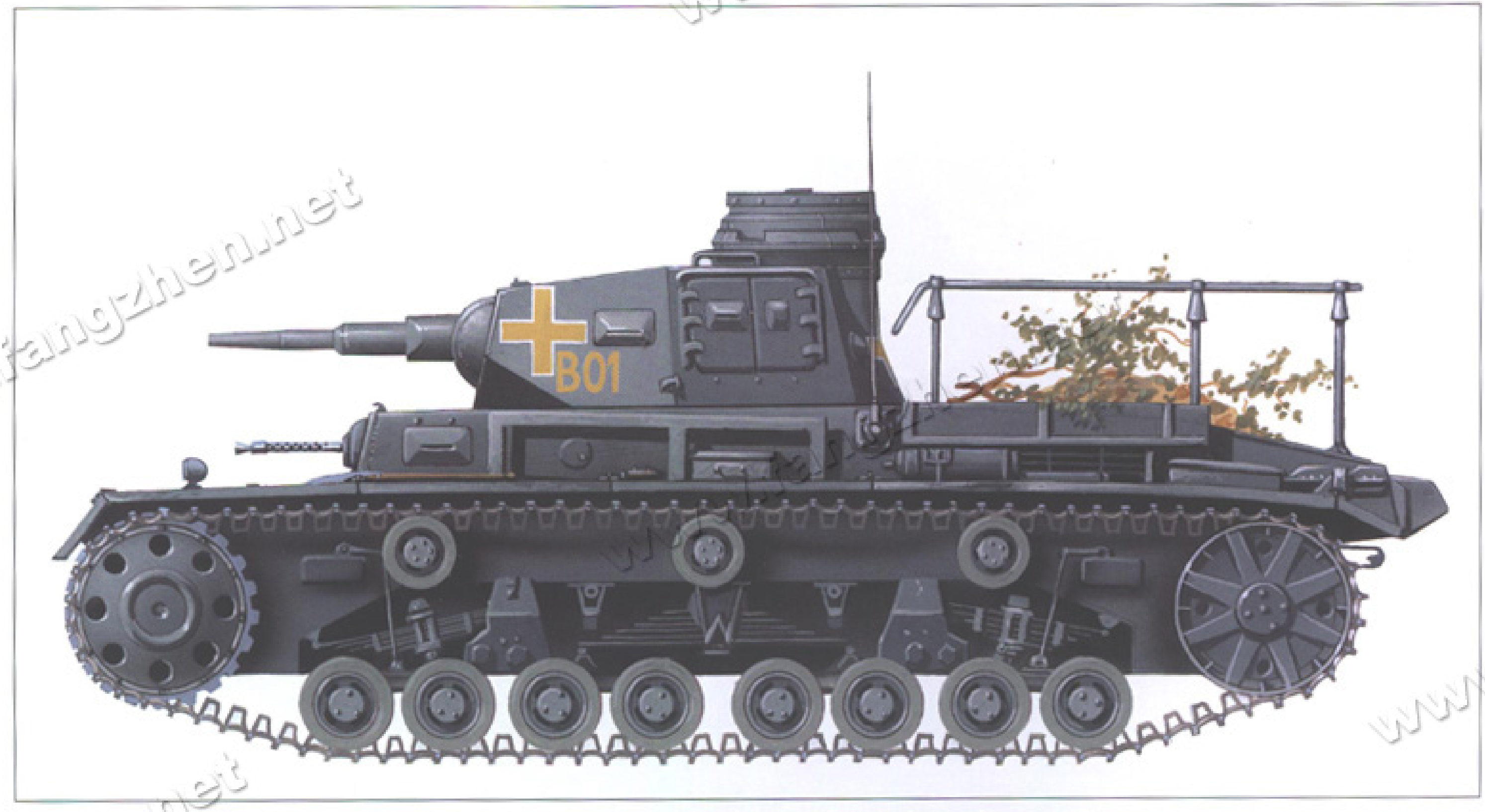
Pz.Kpfw. I Ausf. A, unidentified unit, Nuremberg, 1935/1936

Pz.Kpfw. I Ausf. A from an unidentified tank unit, which was exhibited to the public following one of the Nuremberg military rallies in 1935 or 1936. The tank wears the standard three-color camouflage that is typical of the pre-1936 period, when the re-built German Army still employed the old Reichswehr camouflage composed of a pattern in dark green, dark gray and brown. It was changed in 1935 to a two-color scheme composed of dark gray and brown or, more correctly, dark green. The Pz.Kpfw. I was the only German tank that was painted with the three-color Reichswehr camouflage.



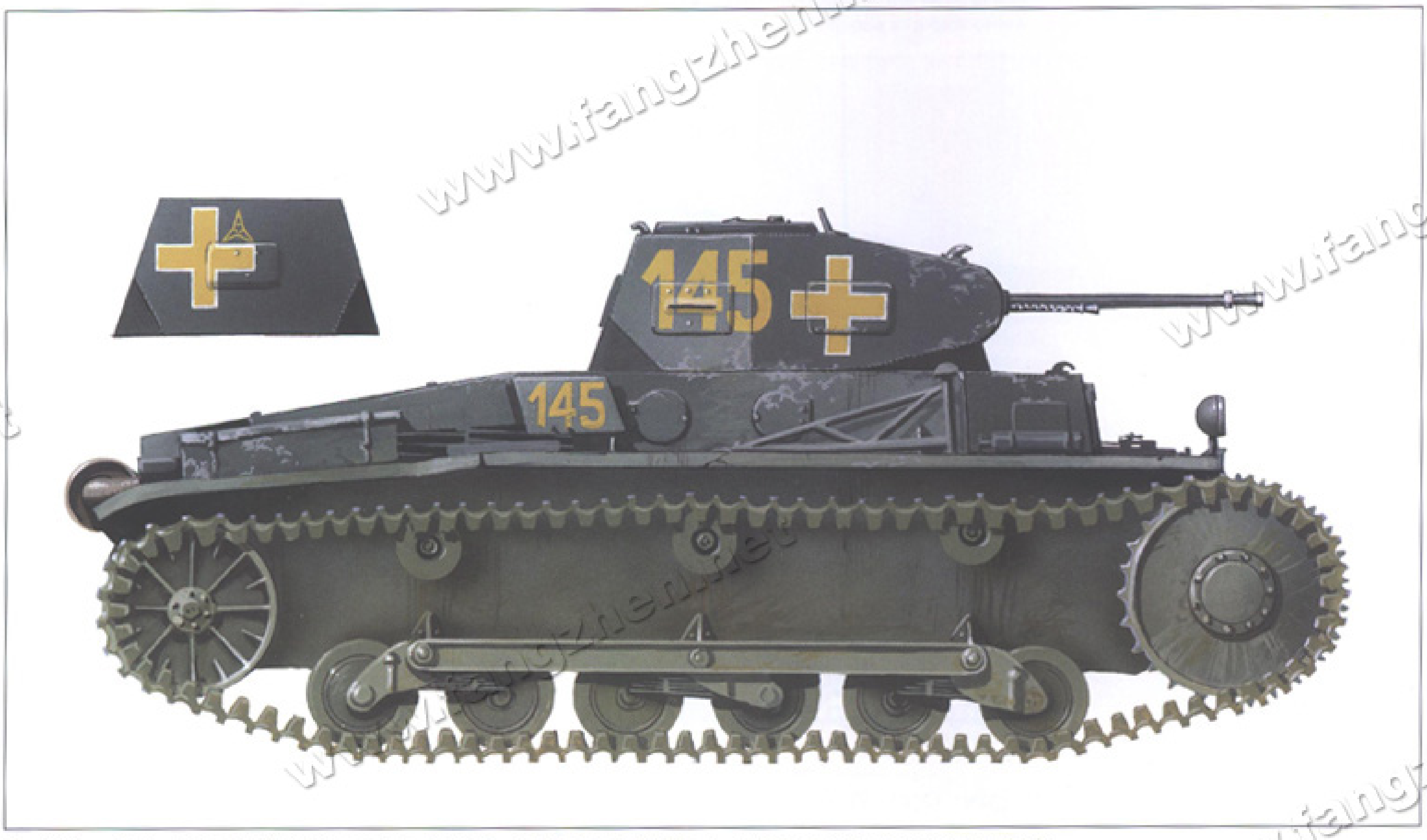
Pz.Kpfw. IV Ausf. B, 8.Pz.Brig., 5.Panzer-Division, Opatów, September 1939

Pz.Kpfw. IV Ausf. B from a company staff of 8.Pz.Brig. of 5.Panzer-Division in Opatów city in the second week of September 1939. The tank carries the typical turret markings of this unit including a white tactical number, which identifies it to 4th platoon of 2nd company, and the yellow rhomboid sign of the Panzertruppen (the same markings, except the number, were carried on the rear of the turret). Very unusual, however, is the name of the tank — "Prag"— taken from the name of the capital city of the Czech Republic. The tank is painted with RAL 7027 dark gray paint.



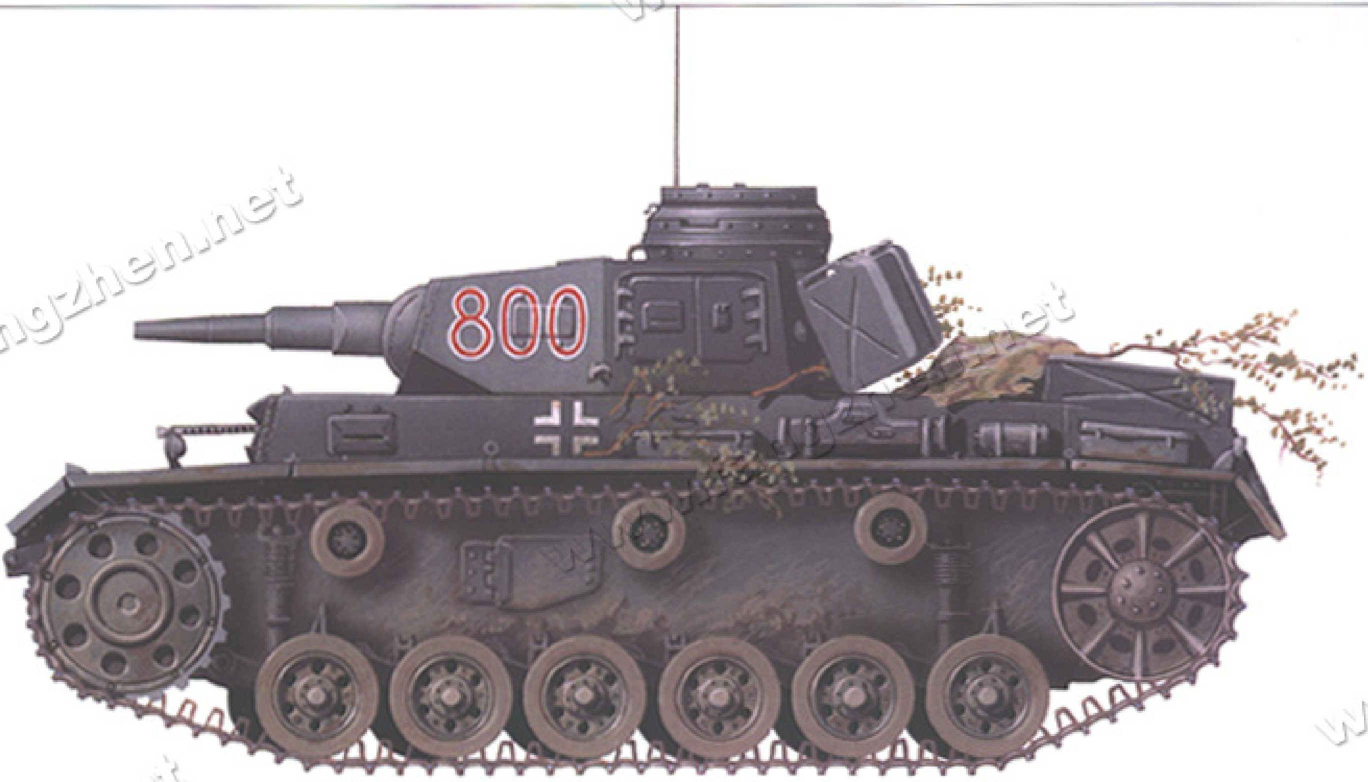
Pz.Bef.Wg. III Ausf. D1, II.Abteilung, Pz.Rgt.36, 4.Panzer-Division, Poland, September 1939

Pz.Bef.Wg III Ausf. D1 belonging to the commanding officer of II.Abteilung from Pz.Rgt.36, which belonged to 4.Panzer-Division in Poland, around 10 September 1939. The tank wears standard camouflage, but the markings are typical of the later period of the war in Poland because they were introduced at the beginning of the second week of "Fall Weiß". The white crosses had been convenient targets for Polish artillery gunners so they were very quickly replaced with yellow crosses, which often featured white borders. The tactical markings indicate the first vehicle in the staff company of the second battalion.



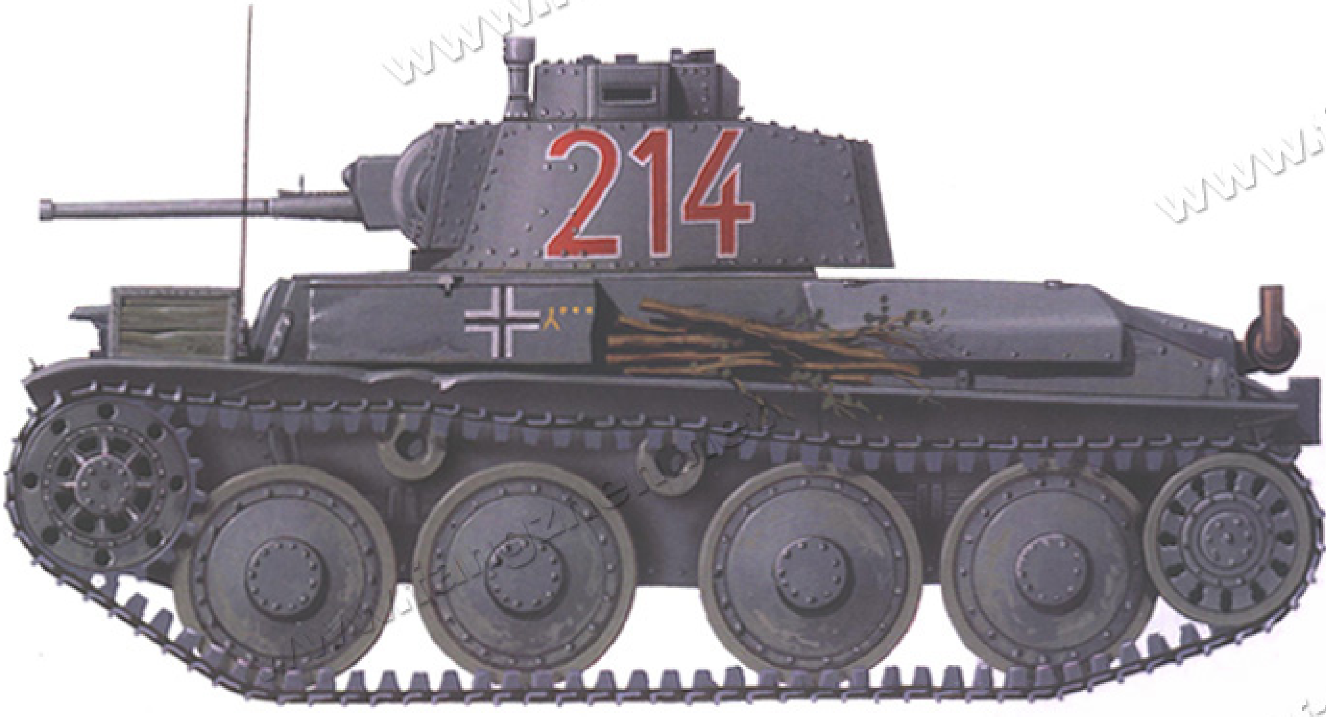
Pz.Kpfw. II Ausf. b, I.Abteilung, Pz.Rgt.35, 4.Panzer-Division, Warsaw, September 1939

Pz.Kpfw. II Ausf. b from 4th platoon of 1st company in I.Abteilung of Pz.Rgt.35, which belonged to 5.Pz.Brig. employed by 4.Panzer-Division, Warsaw, 9 September 1939. The tank has standard camouflage and markings for this period, while a yellow divisional emblem is located on the rear plate of the turret, which was quite an unusual marking for 1939.



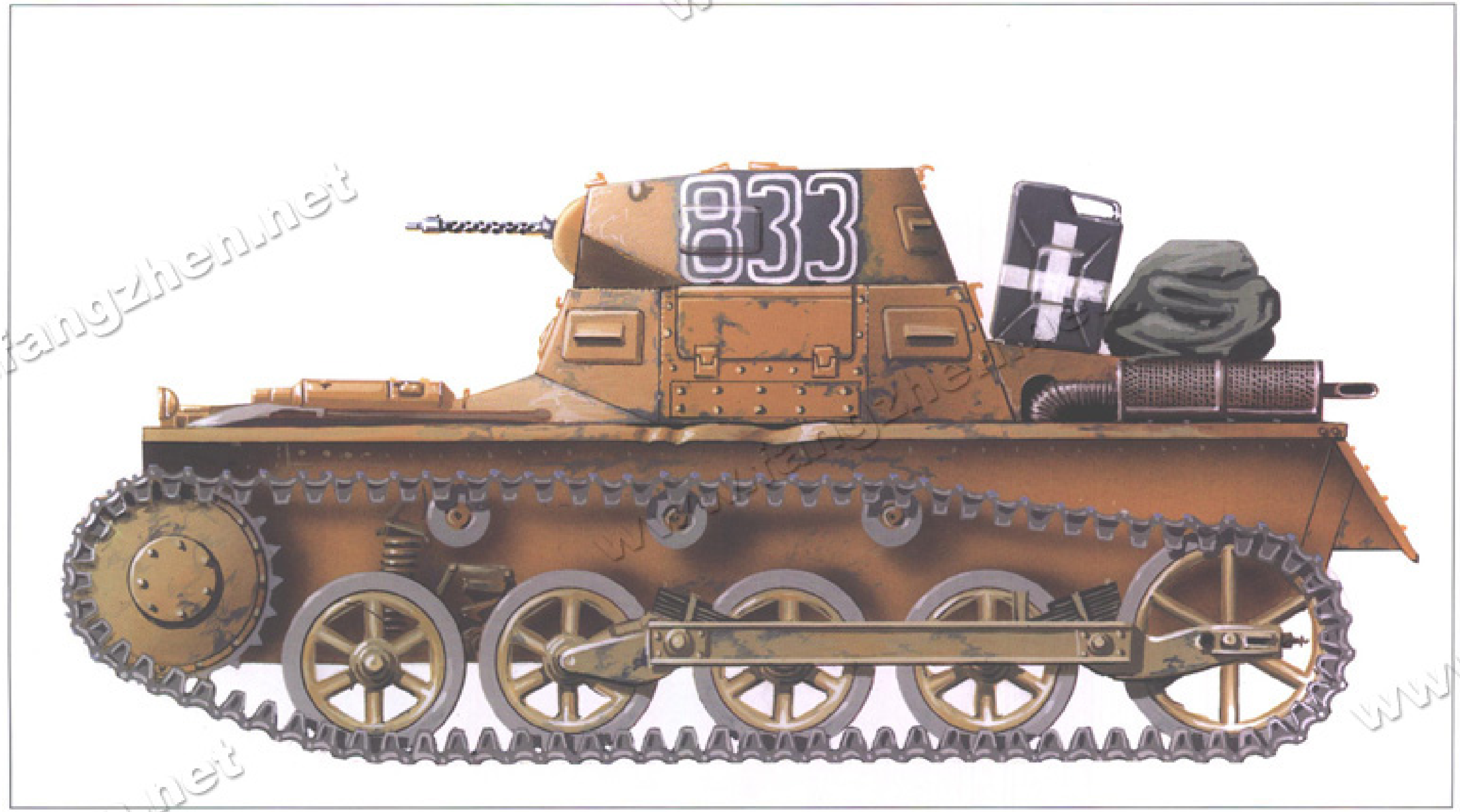
Pz.Kpfw. III Ausf. F, II.Abteilung, Pz.Rgt.6, 3.Panzer-Division, German border, April/May 1940

Pz.Kpfw. III Ausf. F of the middle production series driven by the crew of the 8th light company commander in II.Abteilung from Pz.Rgt.6 of 3.Pz.Brig., which belonged to 3.Panzer-Division, in the west German frontier, April-May 1940. The tank has old standard camouflage of RAL 7027 dark gray, but the tactical markings are the new type that were introduced before the war with France for better identification of tanks in the field. It was painted with big, two-color numbers on the turret, usually red outlined with white. Those seen here indicate the commander (00) of the 8th company (8).



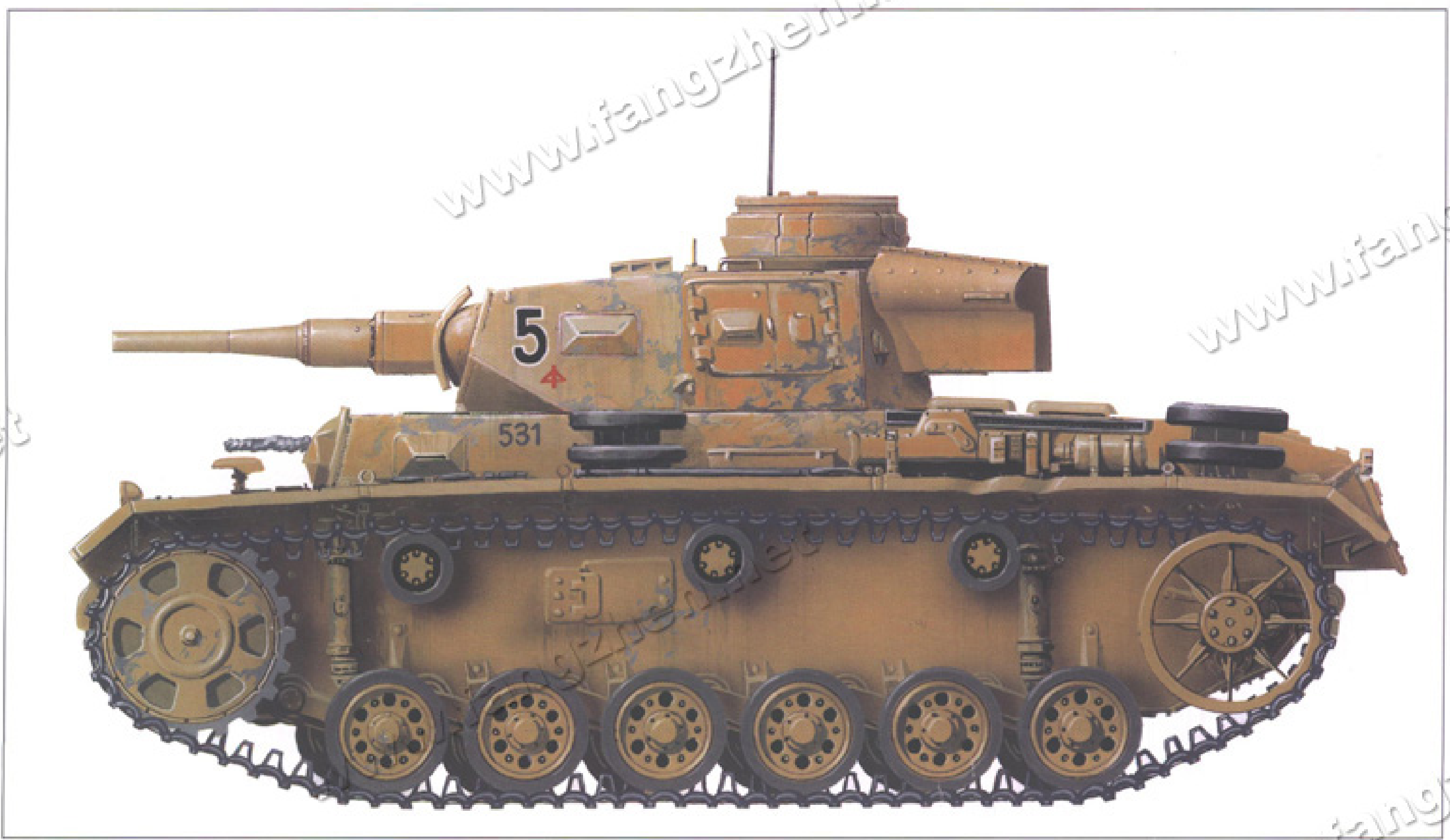
Pz.Kpfw. 38(t) Ausf. B/C, Pz.Rgt.25, 7.Panzer-Division, France, May 1940

It was the 4th tank in 1st platoon from 2nd company of Pz.Rgt.25 from 7.Panzer-Division, which fought its way with XV.Pz.Kp. to the Dunkirk area by way of Belgium. The tank displays the same standard paint scheme and markings as the above tank.



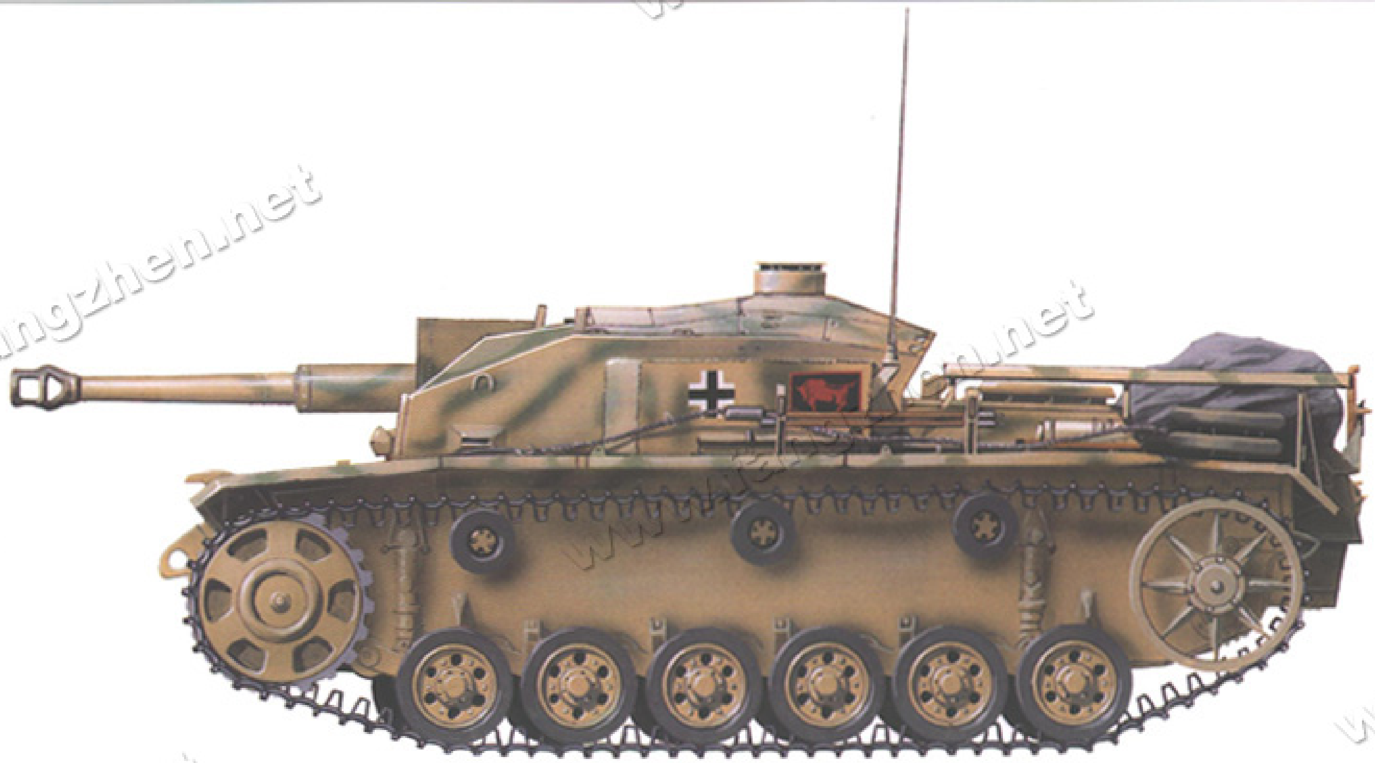
Pz.Kpfw. I Ausf. A, II.Abteilung, Pz.Rgt.5, 5.leichte-Division, Tobruk, summer 1941

It was the 3rd tank in 3rd platoon of 8th company in II.Abteilung of Pz.Rgt.5, which belonged to 5.leichte-Division. In this period the Germans began to paint the tanks of the Deutsche Afrika Korps with sand yellow paint (RAL 8000) for tropical conditions. It was applied in an irregular pattern, and often many small and large spots of dark gray (RAL 7027) were left all around the tanks, especially in the areas where markings were positioned. This Pz.Kpfw. I is camouflaged exactly in this way.



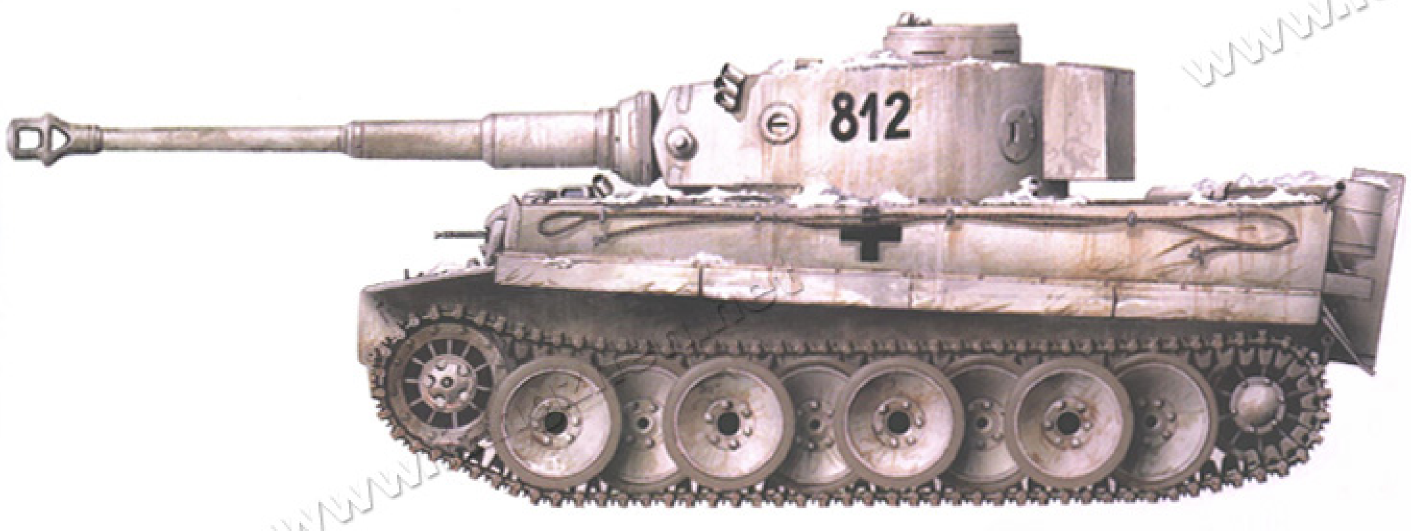
Pz.Kpfw. III Ausf. J, Pz.Rgt.8, 15.Panzer-Division, Gazala area, spring/summer 1942

This Pz.Kpfw. III Ausf. J was the 1st tank in 3rd platoon of 5th company employed by Pz.Rgt.8 from 15.Panzer-Division and wore sand yellow (RAL 8000) applied over the dark gray (RAL 7027) like a coat of dust. The tank has the regimental emblem painted in red on the sides of the turret and a large company number just next to it. This style of tactical numbering was introduced during 1942.



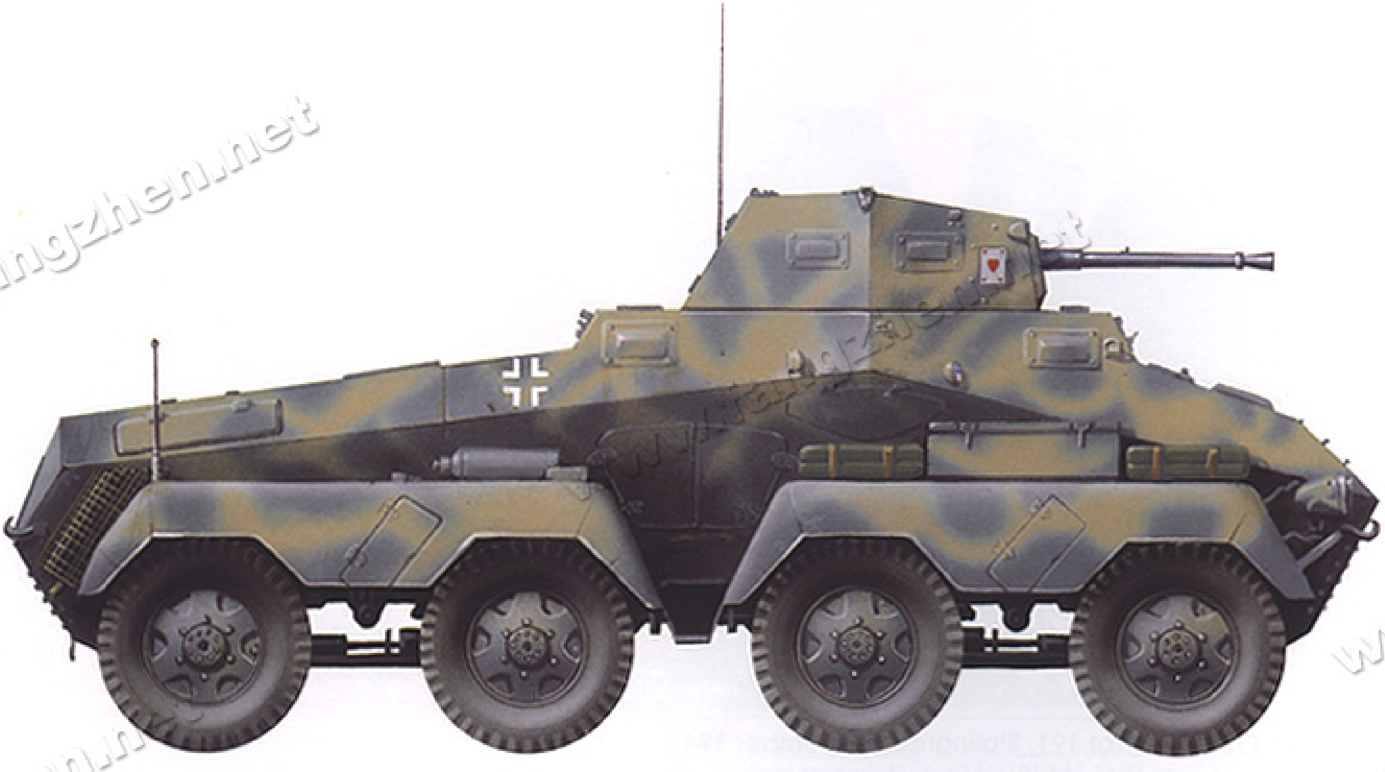
StuG III Ausf. F/8, StuG.Abt.191, Stalingrad, September 1942

StuG III Ausf. F/8 from StuG.Abt.191, H.Gr. B, Stalingrad area, around September 1942. The vehicle wears the brand-new camouflage scheme for this period composed of an olive-green (RAL 8002) pattern over a background of dark yellow (RAL 7028), which was introduced around late August 1942. During this early period of using the new background paint scheme, it was seen mainly on StuG III vehicles, and was almost always devoid of any camouflage pattern, even though both dark yellow and green paint were often applied over dark gray in 24.Panzer-Division to create a camouflage scheme. This example of sand-green camouflage would have been considered very rare in late 1942.



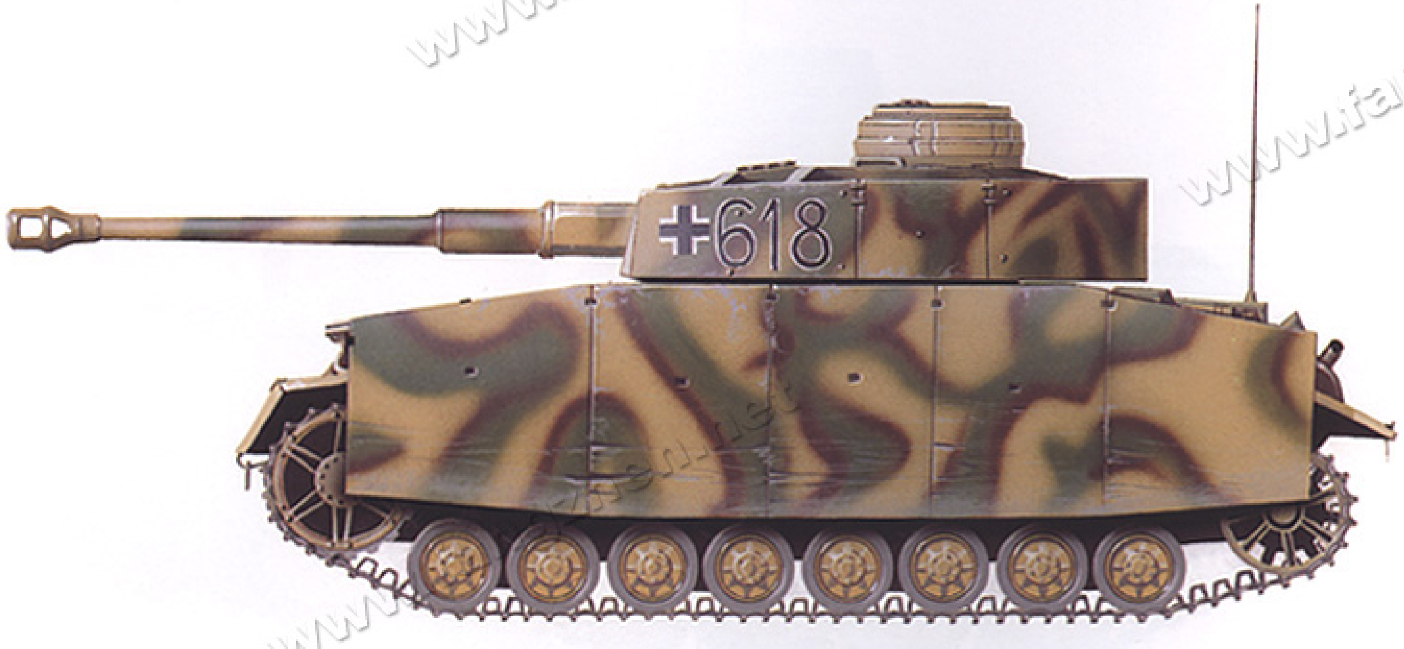
Pz.Kpfw. VI Ausf. E, 3.SS-Pz.Gren.Div. "Totenkopf", Kharkov, March 1943

Pz.Kpfw. VI Ausf. E "Tiger" employed by the 8th heavy company of Pz.Rgt. in the 3.SS-Pz.Gren.Div. "Totenkopf", March 1943, Kharkov area. The tank was camouflaged in the standard manner for the winter season, i.e., with a heavy coat of whitewash applied over a dark gray base. The national cross and tactical number are also typical. Note, though, that the number was painted over the white camouflage, while the cross is the original one.



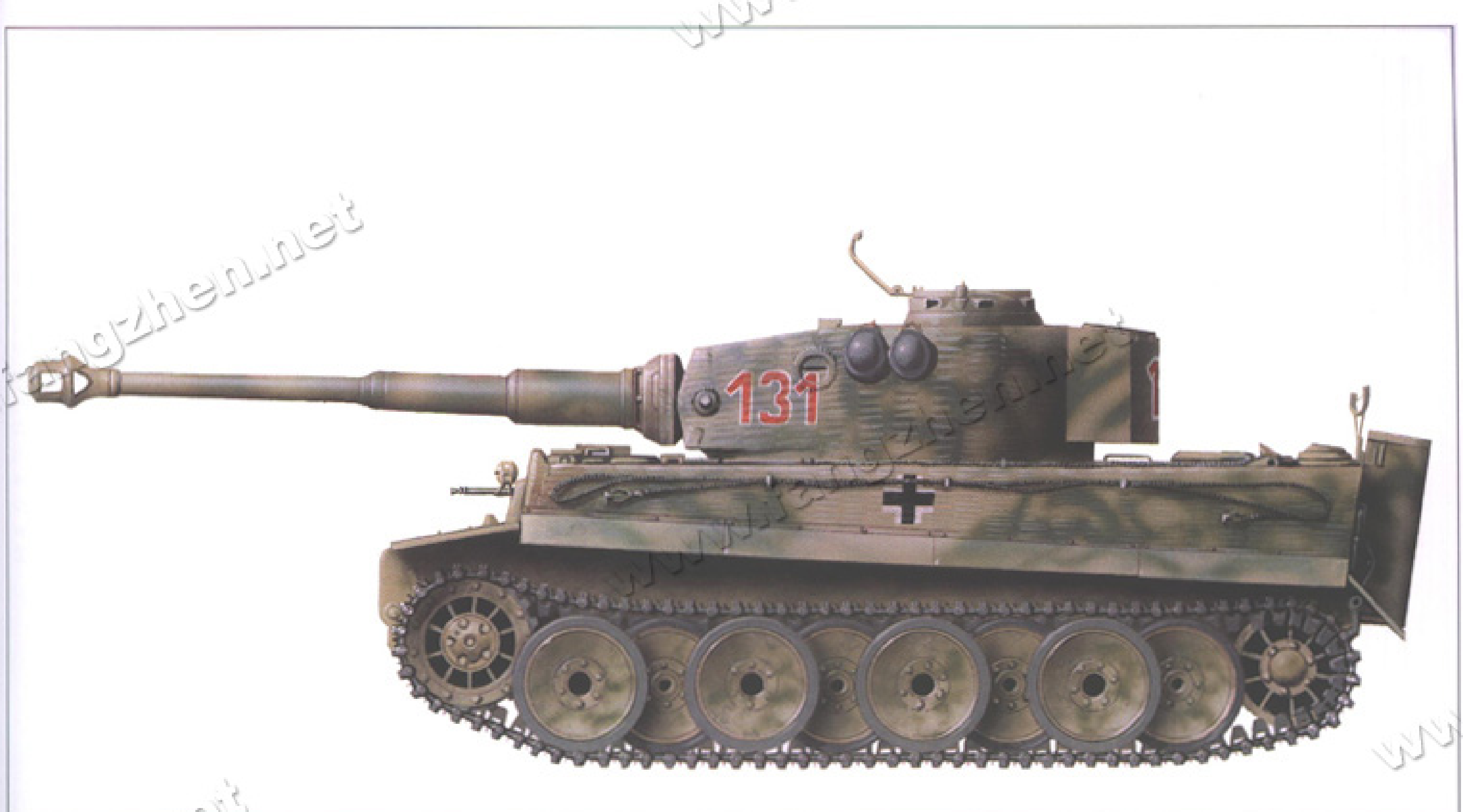
Schwere Panzerspähwagen Sd.Kfz. 231 (8-Rad), 11.Panzer-Division, Kursk bulge, July 1943

Sd.Kfz. 231 probably from 11.Panzer-Division, the Kursk bulge, July 1943. This heavy armored car is painted in the old style of camouflage of a dark yellow (RAL 7028) pattern over the standard dark gray (RAL 7027) background. It wears a unit emblem, but is without tactical numbering.



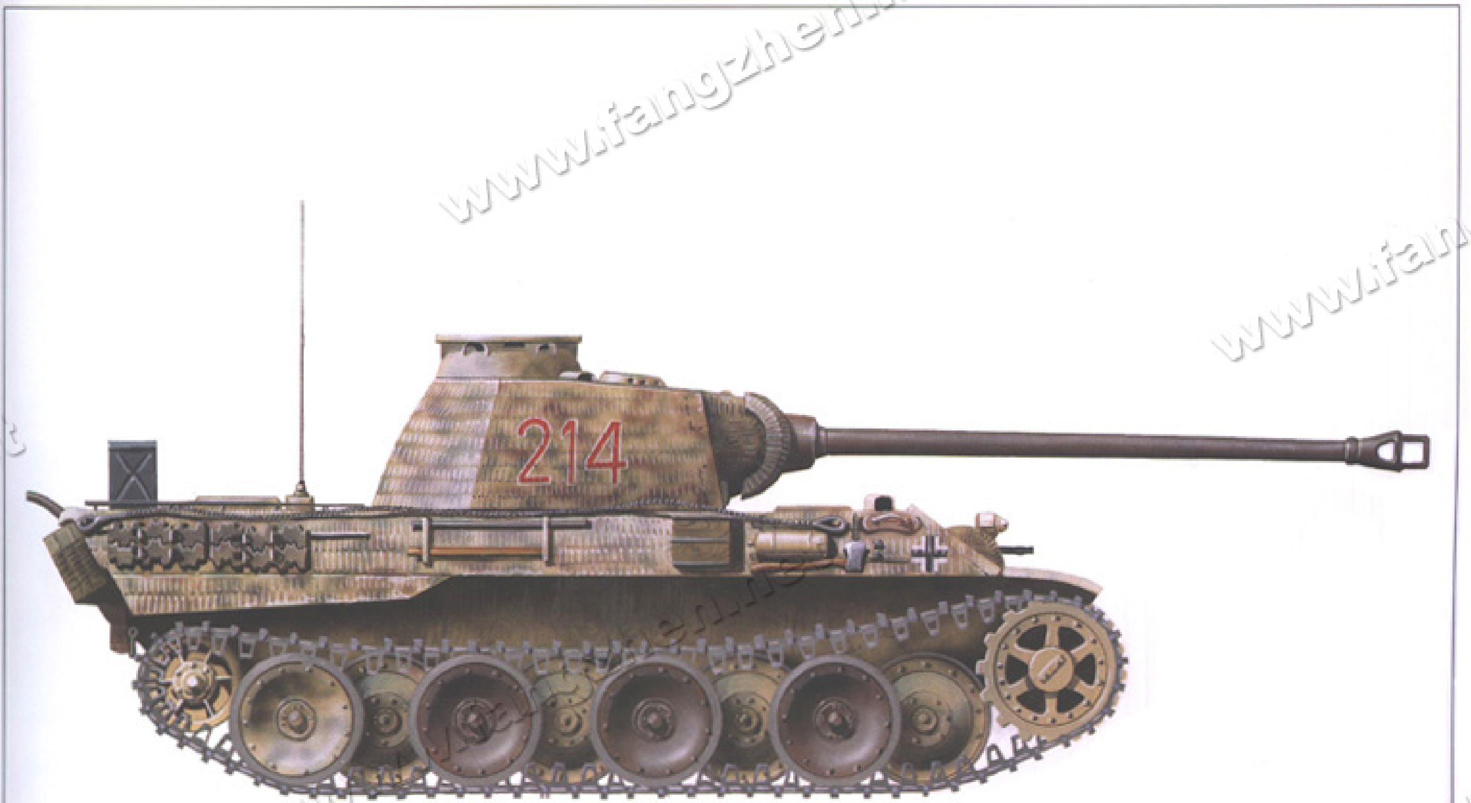
Pz.Kpfw. IV Ausf. H, 12.SS-Pz.Div. "Hitlerjugend", northern France, May 1944

Pz.Kpfw. IV Ausf. H, northern France, May 1944. Tank number "8" was employed by 1st platoon in 6th company of II.Abteilung from SS-Pz.Rgt.12, which belonged to 12.SS-Pz.Div. "Hitlerjugend". The tank wears the standard spring season camouflage for the second half of the war, with a two-color pattern of RAL 8002 olive-green and RAL 8017 dark brown sprayed over a background of RAL 7028 dark yellow. The two-color tactical numbering was applied with a paint brush without any stencil in the same way as it was done on all the other tanks of this company.



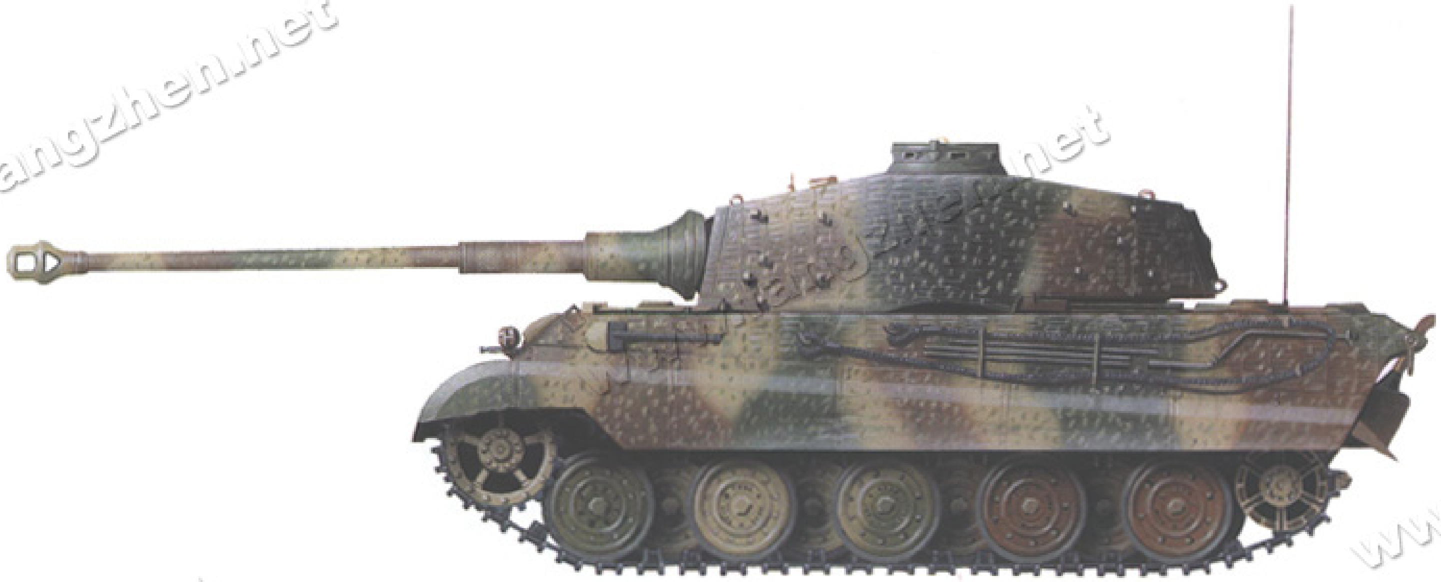
Pz.Kpfw. VI Ausf. E, sSS-Pz.Abt.101, Normandy, 1944

Pz.Kpfw. VI "Tiger" of sSS-Pz.Abt.101, tactical number "131" belonging to the 1st company commanded by SS-Hauptsturmführer Moebius. The unit fought in Normandy during the summer of 1944 and started the campaign with 37 Tiger Is, losing about 40 by the end of it. All the tanks of this unit were painted in the same way, i.e., with an olive-green (RAL 8002) camouflage pattern over a background of dark yellow (RAL 7028). The tactical markings, which included numbering, tactical sign on the front plate and the unit emblem on the rear plate (both of these markings were in white), were painted over the camouflage.



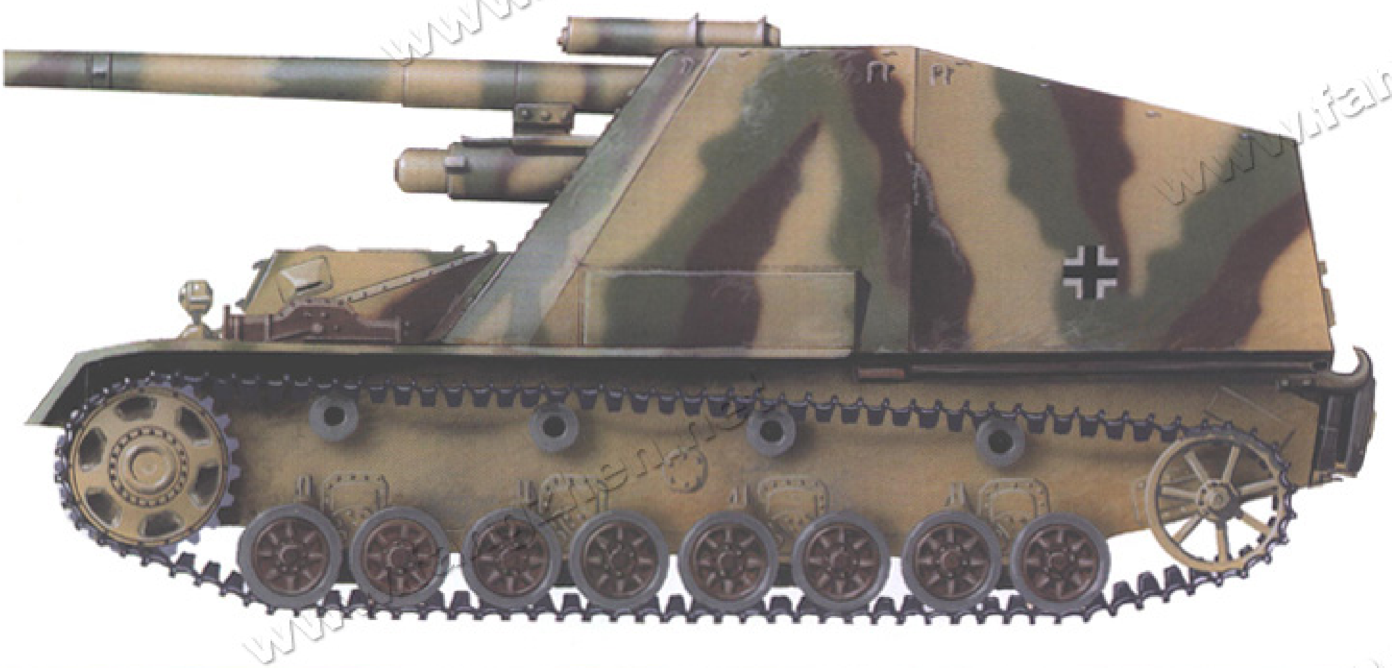
Pz.Kpfw. V Ausf. A, Fsh.Pz.Div. "Hermann Göring", Italy, summer 1944

Pz.Kpfw. V Ausf. A "Panther" used in 1st platoon from 2nd company of Fallschirm Panzer-Division "Hermann Göring" during the summer fighting in northeastern Italy. It carries a three-color camouflage scheme consisting of a pattern of olive-green and dark brown sprayed over the dark yellow background of the tank. The gun barrel, the side of the mantlet and the three road wheels were covered with dark brown only.



Pz.Kpfw. VI Ausf. B Tiger II, sPz.Abt.503, Hungary, autumn 1944

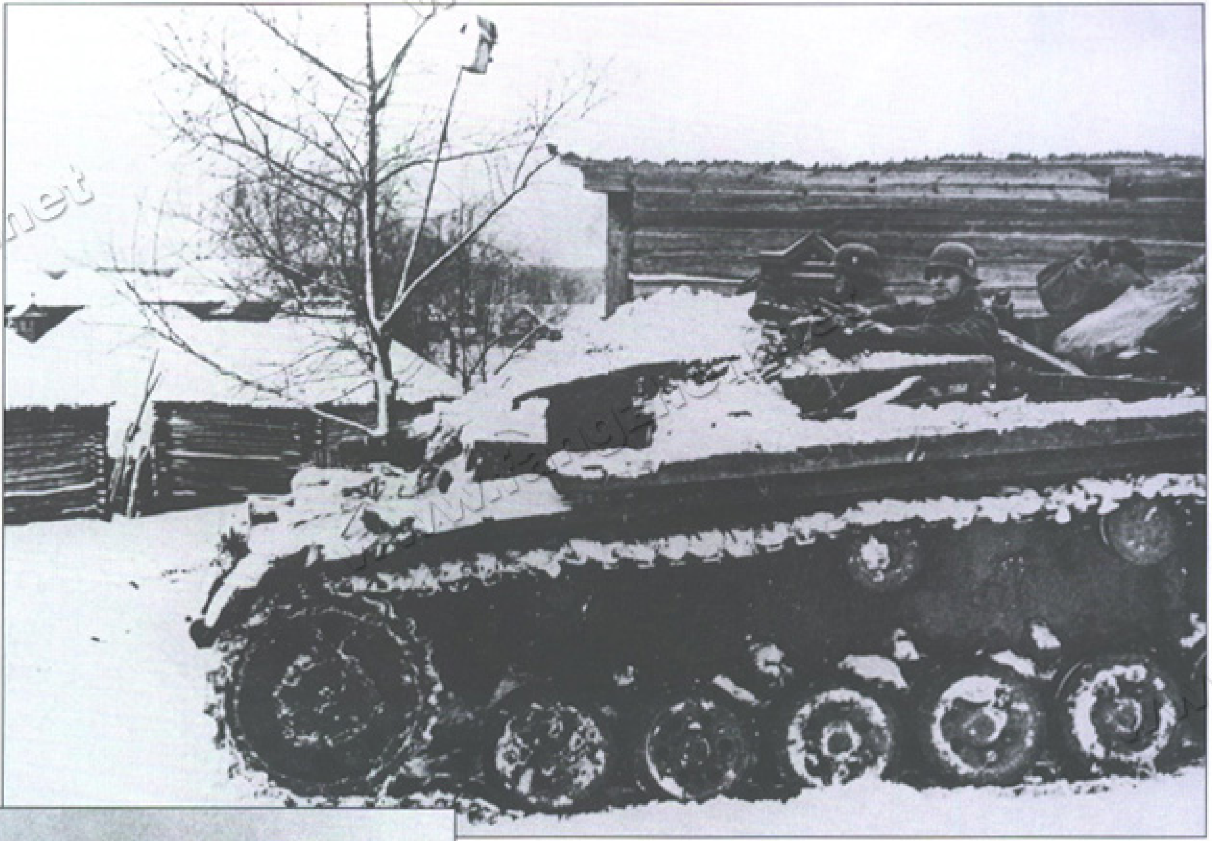
Pz.Kpfw. VI Ausf. B "Tiger II" from sPz.Abt.503, Hungary, late autumn of 1944. The Tiger was painted in what was probably the most effective camouflage devised during the war — the "Ambush" pattern. It was composed of new colors, dark green and red-brown applied in large spots all over the side surfaces of the tank and covered with tiny light gray or even white spots on the green/brown, with the same type of pattern in green over the dark yellow color. The wheels were painted completely in green or brown. The sPz.Abt.503 was renamed sPz.Abt. "Feldherrnhalle" in January 1945 and was committed to the defense of Budapest.

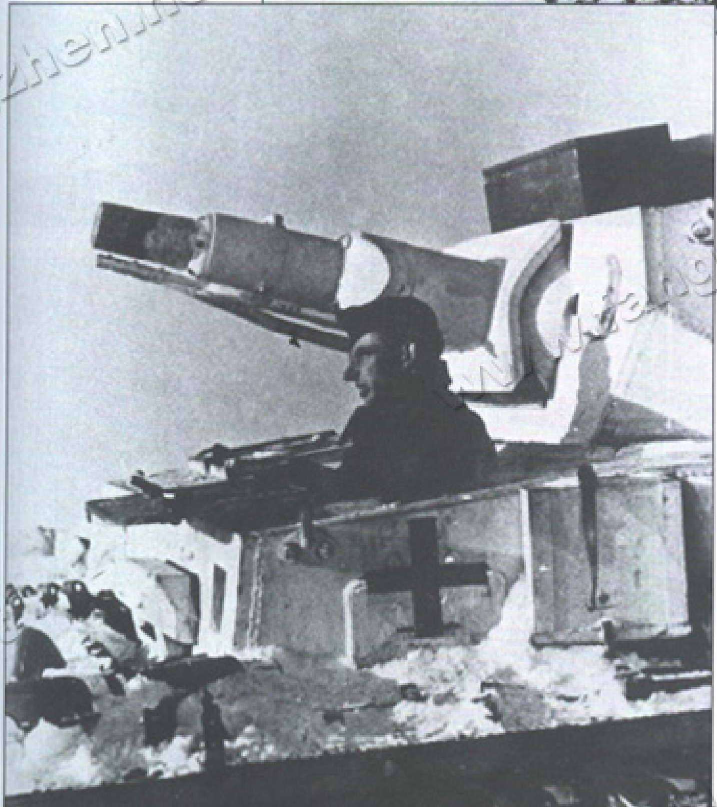


Sd.Kfz. 165 Hummel, unidentified unit, western Germany, spring 1945

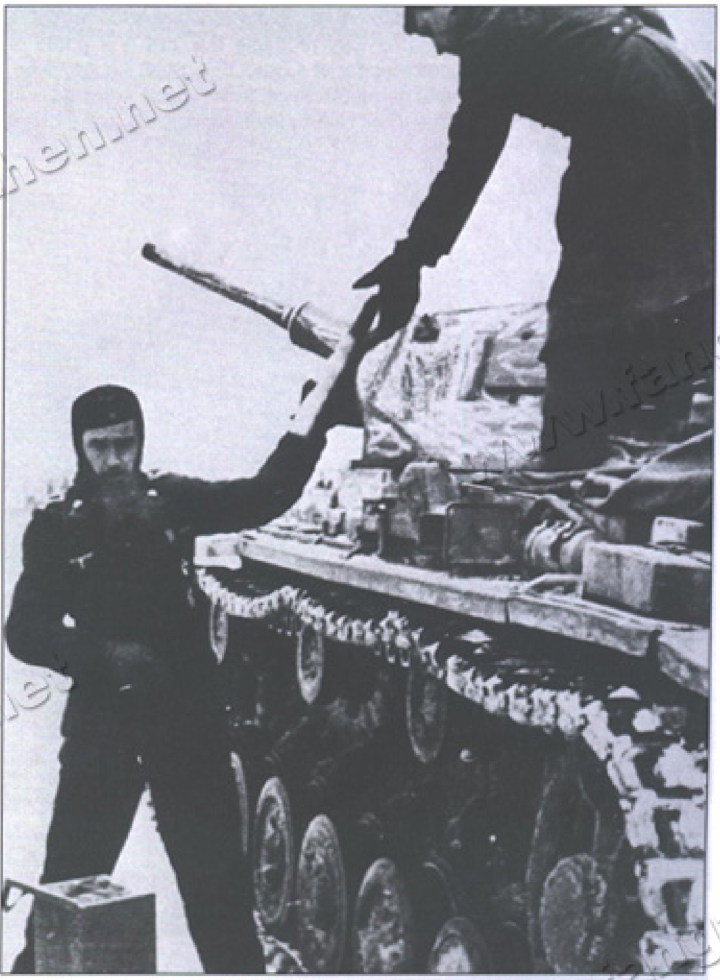
Sd.Kfz. 165 "Hummel" abandoned by a German self-propelled artillery unit in western Germany during the last weeks of the war, spring of 1945. The vehicle is painted with an interesting two-color camouflage pattern applied over a dark yellow background. While the dark yellow paint used to compose this camouflage was the old one, RAL 7028, the two other colors were the new ones introduced in the autumn of 1944, dark green (RAL 6002) and red-brown (RAL 8012).

Snow was probably better camouflage than white paint, but it was not as durable as paint or whitewash when the vehicle was in full use. It also caused some problems in the operation of the vehicle. However, the Panzerwaffe crews that fought at the beginning of winter 1941/42 had no choice of winter camouflage since no paint or whitewash was available, so they often drove vehicles covered with snow, like the StuG III in this photo.



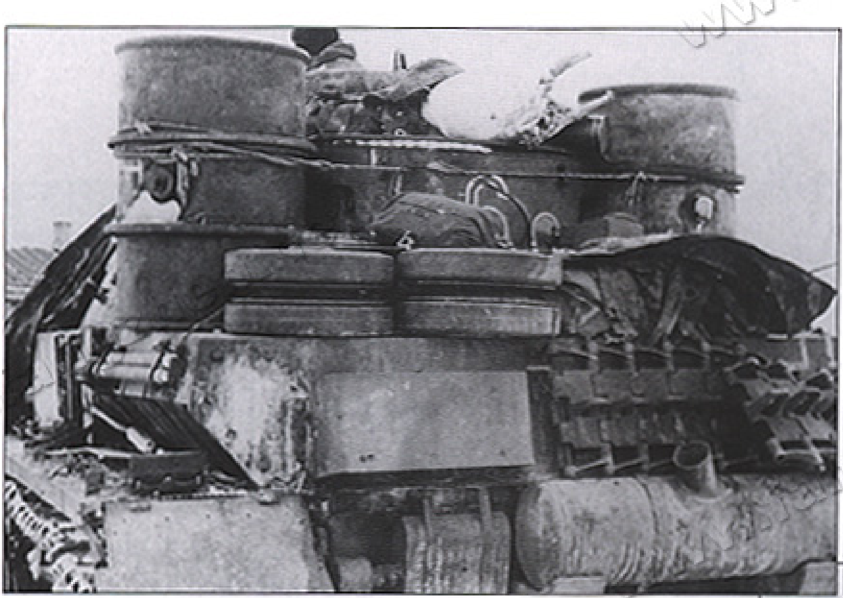


A close-up photo of a PzKpw IV Ausf. E employed in 5.Panzer-Division during early 1942. A yellow division insignia painted on a dark gray background is visible near the edge of the front plate of the superstructure, where it is outlined with white camouflage paint. Below the driver is a national cross whose white outline is darker than the coat of white camouflage. This was typical because the white paint of markings absorbed dirt very quickly, transforming the white color into gray, cream, etc.

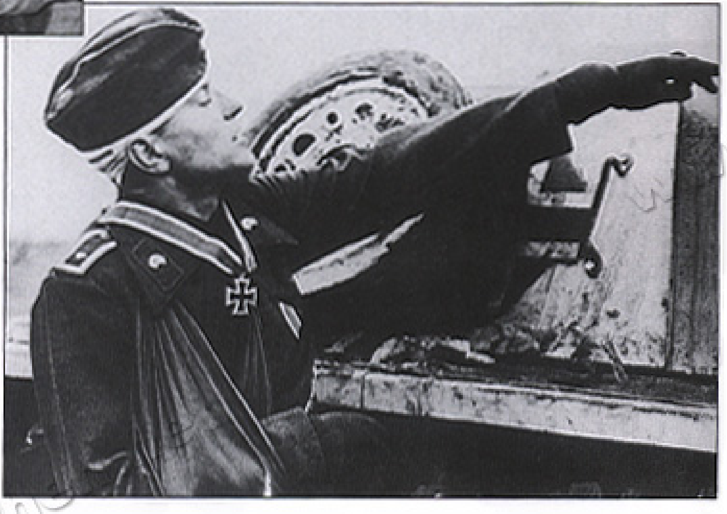


Crew members of a Pz.Kpfw. III keep warm by loading rounds of ammunition into their tank in January 1942. At this time most Panzer divisions still had no whitewash or white paint to camouflage their armored fighting vehicles, so the crews sometimes rubbed chalk over the dark gray paint, which was good for a few weeks or so.

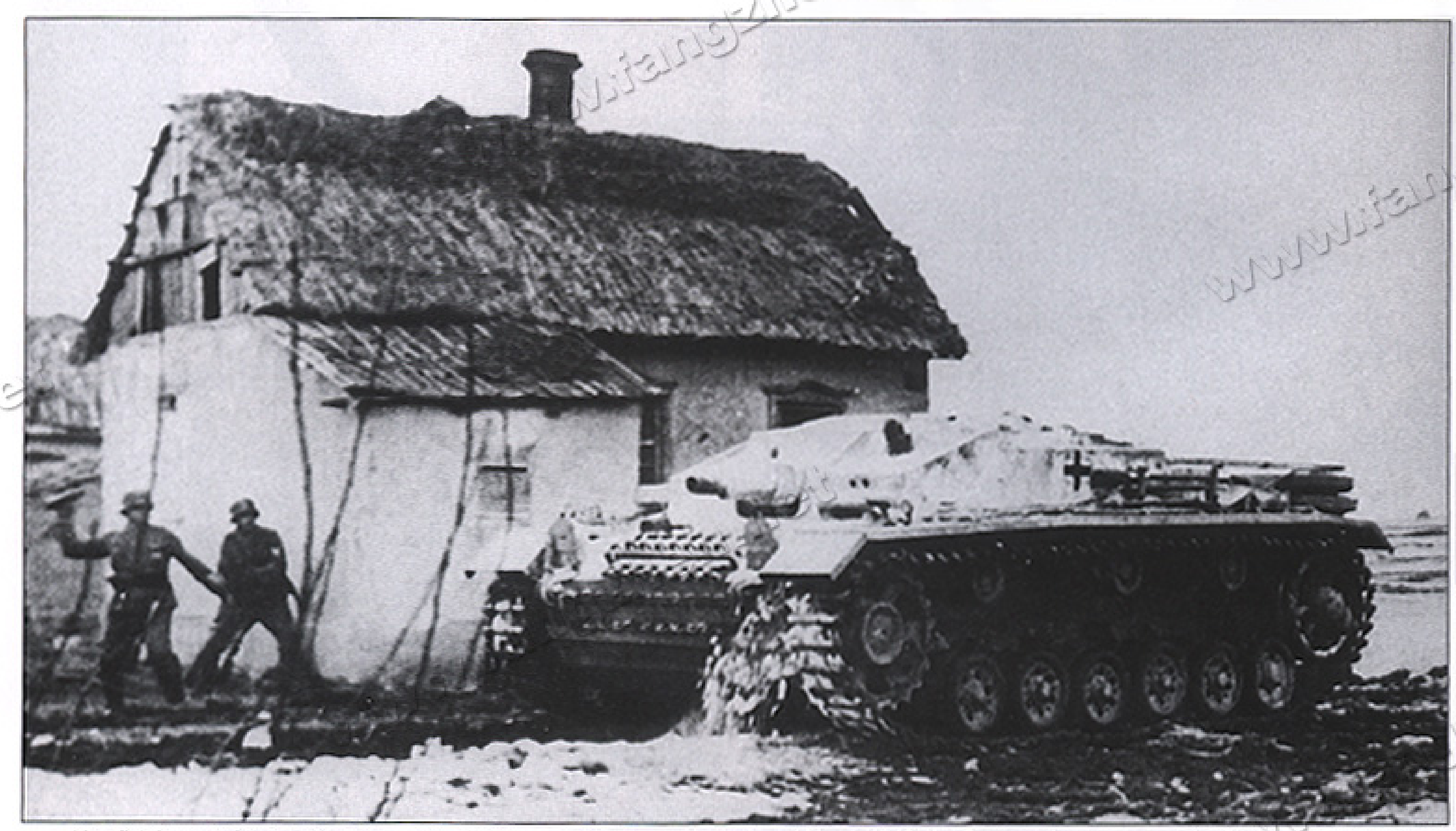
www.fangzhenn.net



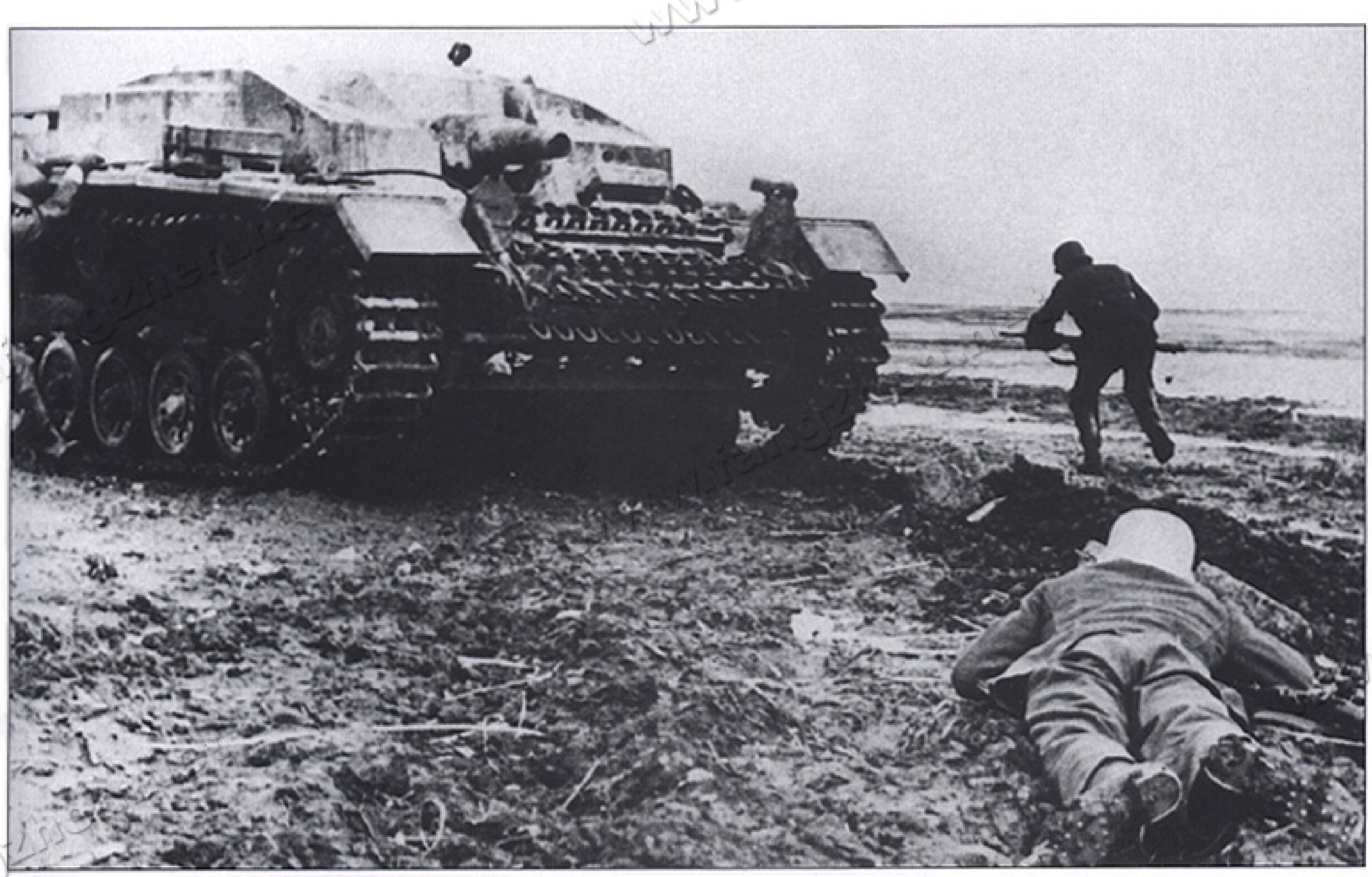
A heavily loaded Pz.Kpfw. IV photographed in March 1942. Probably everything a crew could need to survive a few days away from its division's supply sub-units is on this tank. Modelers will want to note the additional spare wheels and tracks, which were needed to repair damage caused by anti-tank mines, the fuel drums (note how they are affixed to the tank so the turret cannot be moved into any direction), "dinner" (on the turret bin), and a number of camouflaged tarpaulins that were used to keep the inside of tank warm against gusts of winter wind.



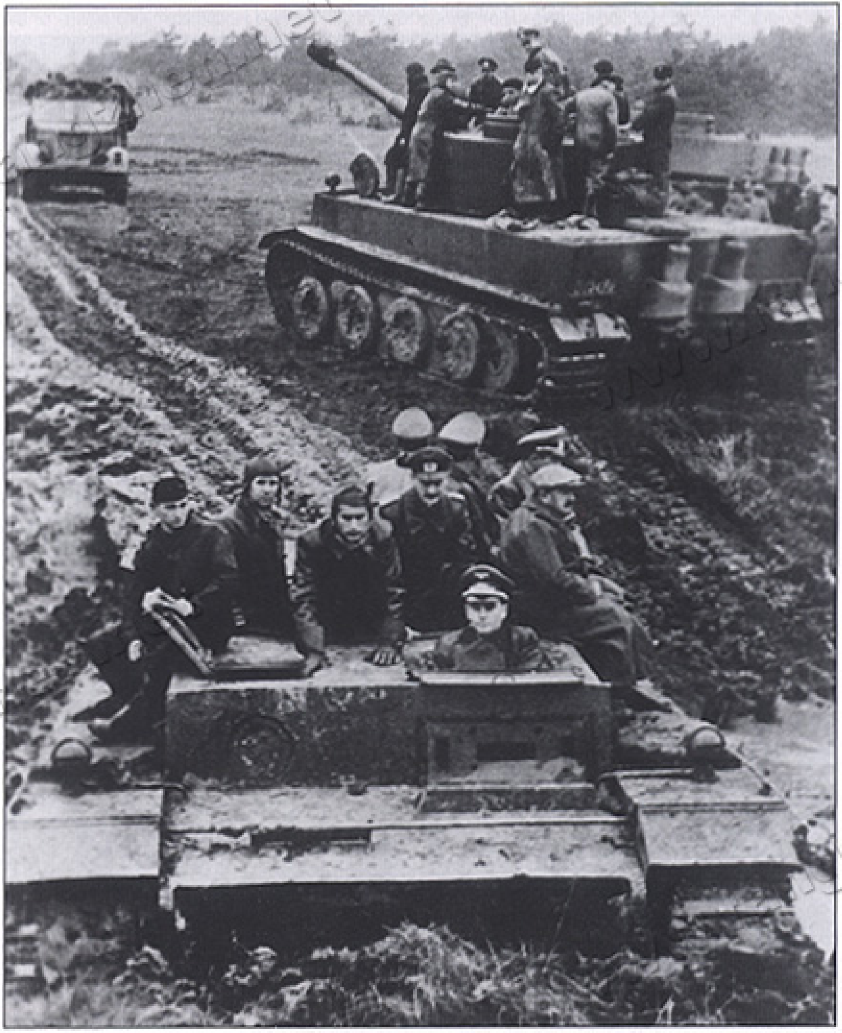
This commander of a StuG III was decorated with the Ritterkreuz for successes achieved in battle against Soviet armored units. The unit in which this officer served claimed 24 destroyed tanks during eight hours of battle and 40 tanks within few days. It is very probable that this is a photo of Wachtmeister Kurt Kirchner, commander of a StuG III in StuG.Abt.667 who, despite being wounded, claimed about 30 Soviet tanks in just a few days in February 1942. Note the way the white camouflage was applied to the wheel and the armor plate.



After fighting subsided on the Eastern Front at the end of February/beginning of March 1942, the Germans began preparation for the next campaign in 1942, which included the training of soldiers. Here a StuG III participates in a tank killing exercise. The anti-tank weapon in the hand of the soldier at the extreme left is noteworthy. It appears to be a bottle resembling the so-called "Molotov cocktail", a weapon used more by the Soviets than the Germans.

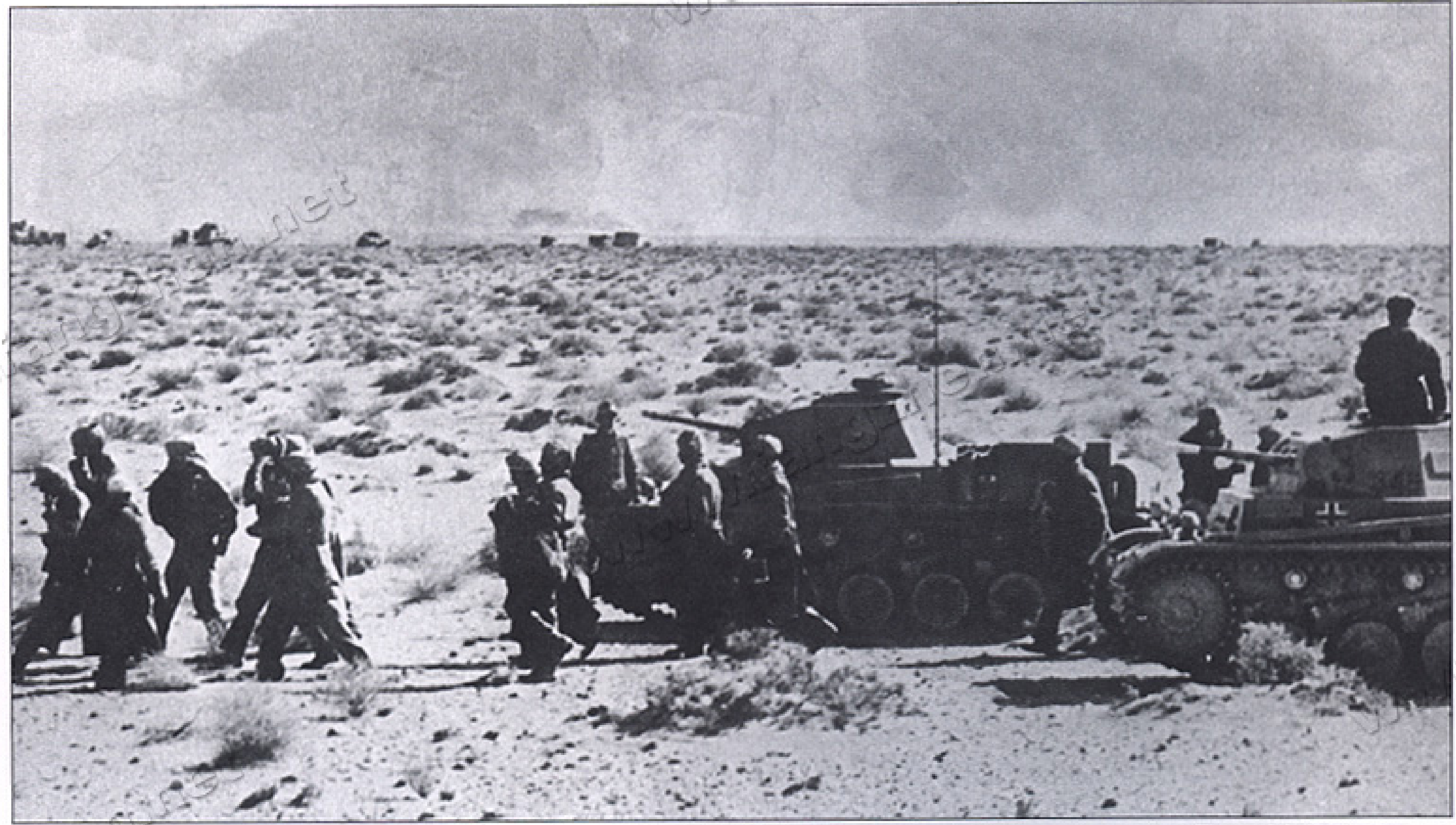


Another photo showing tank killing exercises. Note the soldier at left trying to climb aboard the StuG III. It is interesting to note that though the white camouflage covers the superstructure and upper part of the hull of the StuG, the front and side of the hull are not camouflaged.

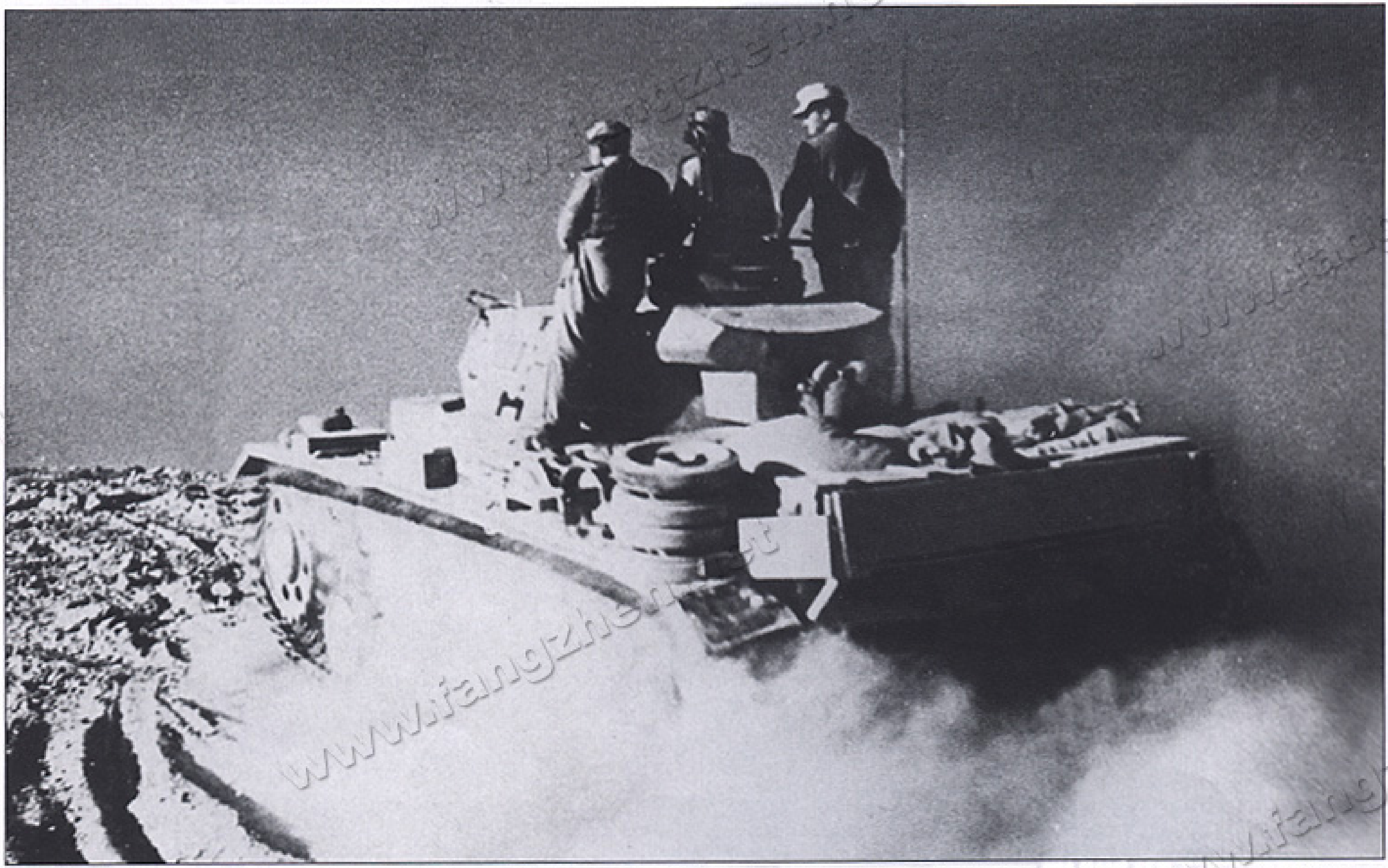


Albert Speer, Minister of Armaments and War Production for the Third Reich, test drives the first true prototype of the Pz.Kpfw. VI "Tiger" in early 1942. This was probably the most legendary tank of WWII. The tank in the foreground is the VK3601 produced by Henschel, while the one in the background is one of the first pre-production Tigers. Behind it is one of the original prototypes without a turret.

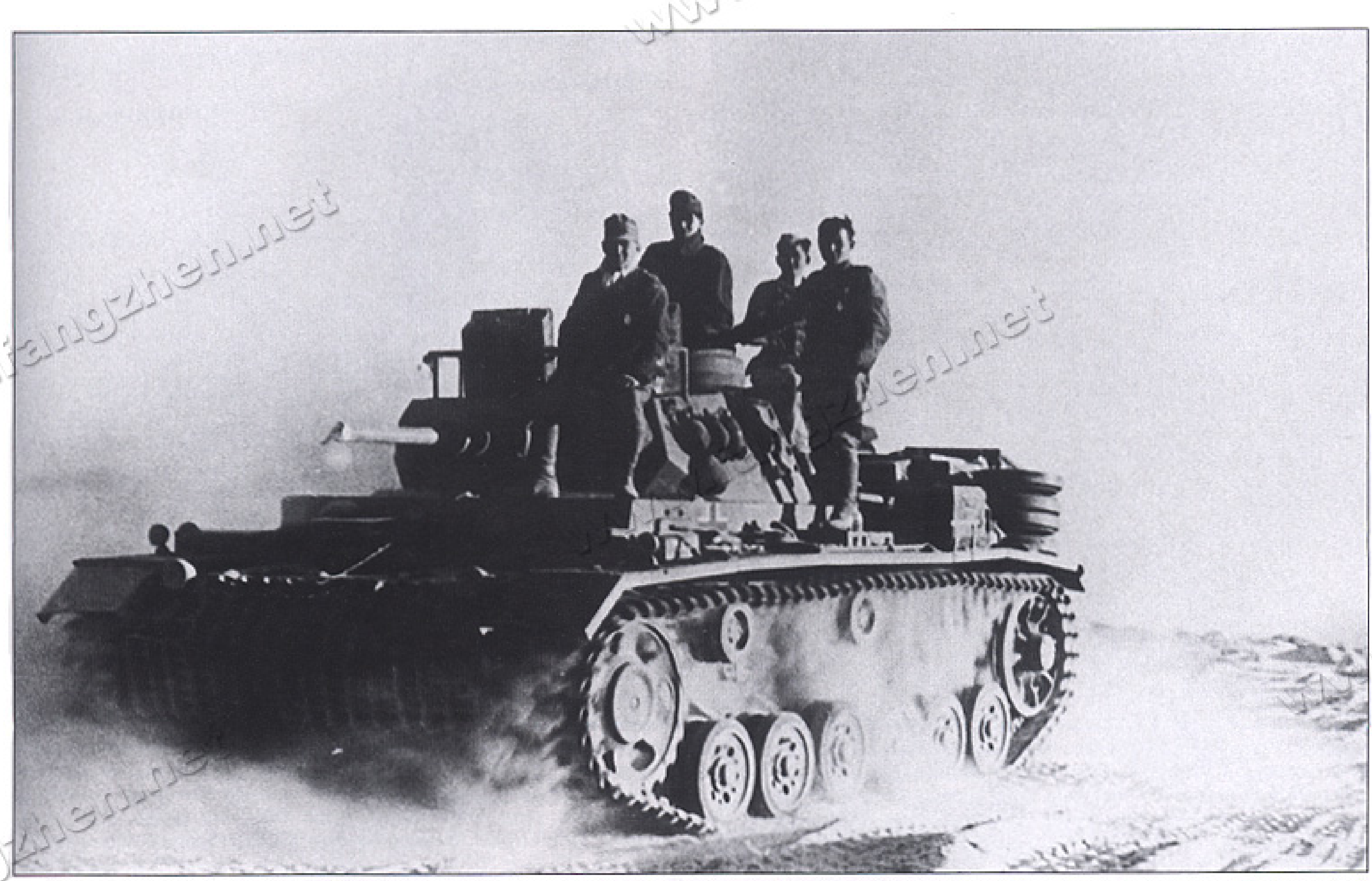
www.fangzhe.net



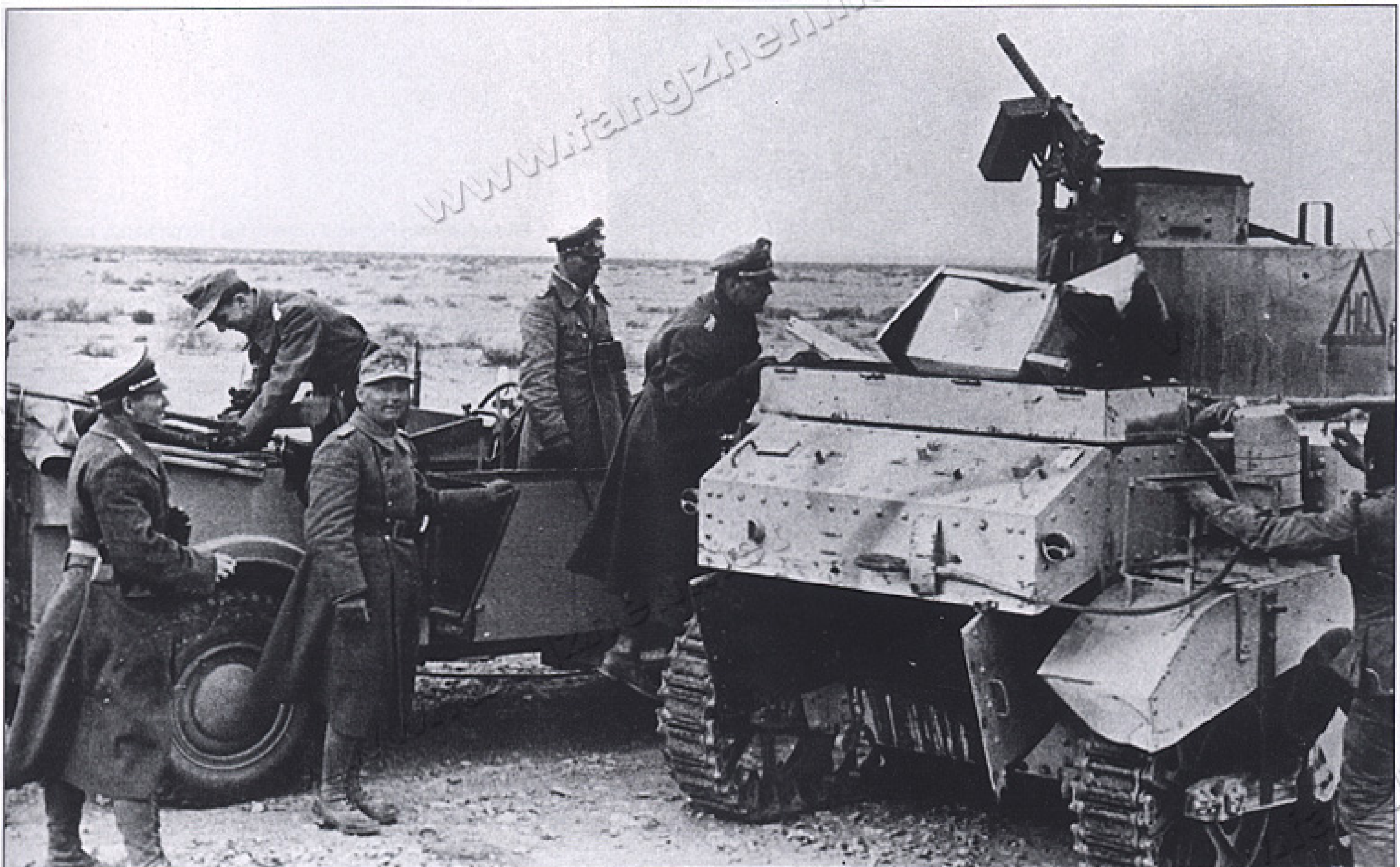
British POWs pass between a couple of Pz.Kpfw. IIs in North Africa. The vehicles are camouflaged with two different colors. The tank in the background is painted dark gray, while the vehicle closer to the camera is painted with sand camouflage. It features a style of tactical numbering that was often seen in 1942, composed of one big number — the first one — followed by two smaller ones, or with the first number repeated in a larger size near the full three-digit number. This second type of numbering is clearly visible in this photo, despite its poor quality. The tank wears a large number "3", indicating the 3rd company. Next to it is the full number "345", probably painted in red.



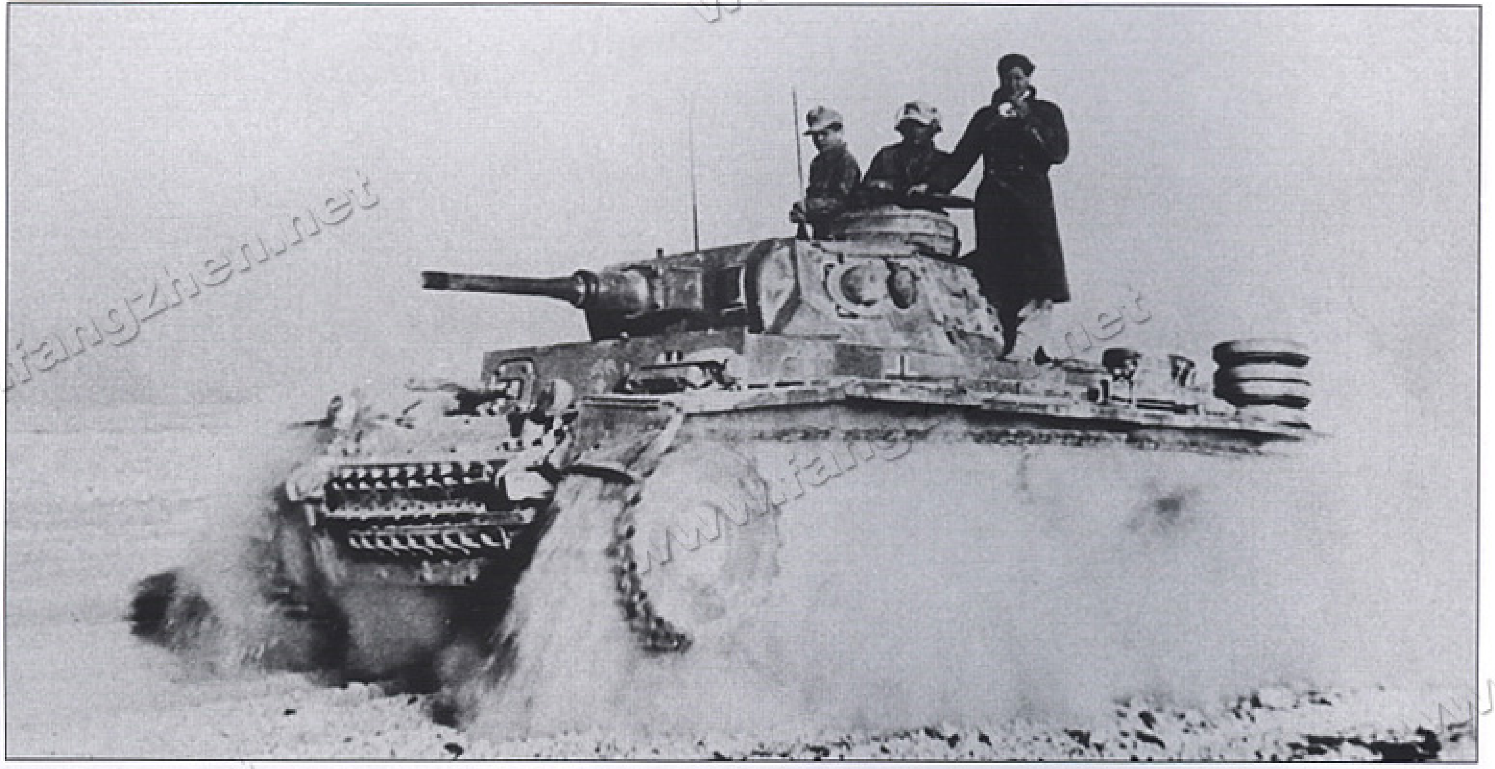
A lonely Pz.Kpfw. III kicks up a cloud of dust in the West African desert. A wooden storage rack has been added to its engine deck for easier transport of the crew's belongings. The tank is marked with large numbers, but only the first number is painted in red or black and outlined with white, which indicates the second company.



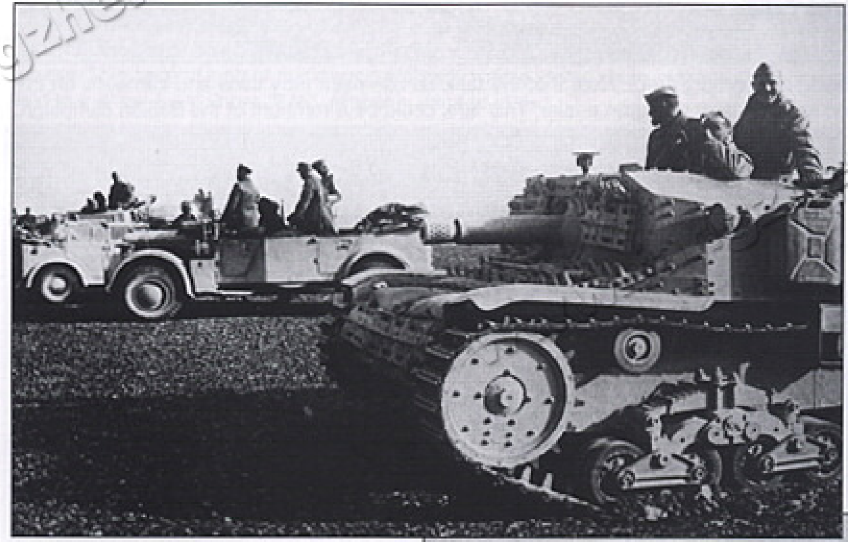
A Pz.Kpfw. III Ausf. J with a short 5cm gun stirs up the desert sand in February 1942. Note that the tank carries extra jerry cans and canteens on the turret, in the front of the command cupola, where a rack was installed to make their transport easier. This tank could be a remnant of the Balkan campaign.



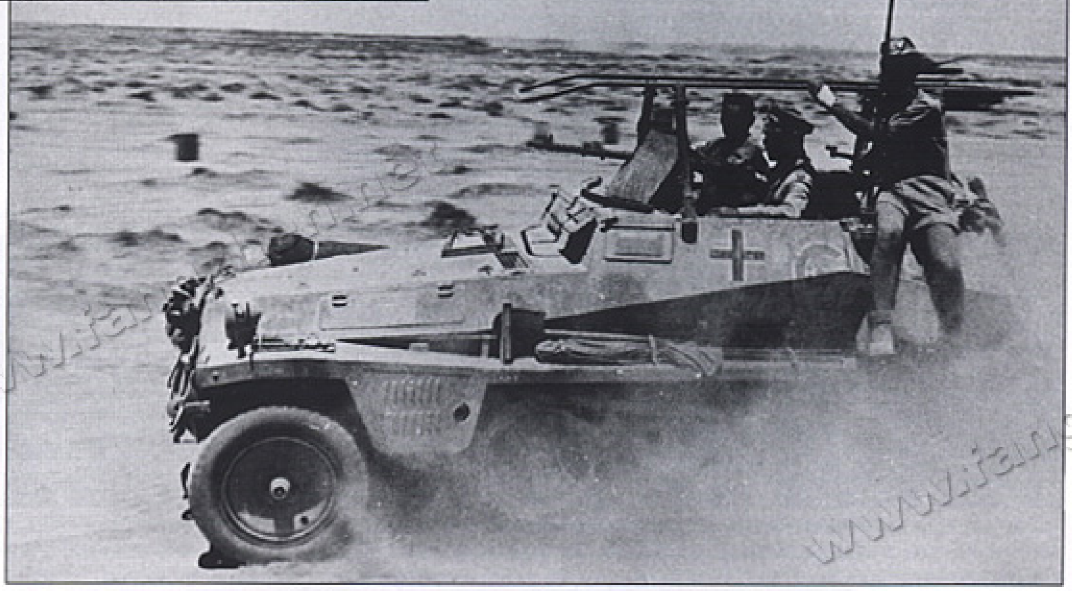
Erwin Rommel inspects an M3 "Stuart" tank that was used by the staff of a British unit before it was knocked out during one of the battles in April 1942. At first there was a balance in the quality of armored weapons in Africa, but this changed in the middle of 1942 when the British received the M3 and then M4 medium tanks from the USA, which were equipped with powerful guns and good armor protection.



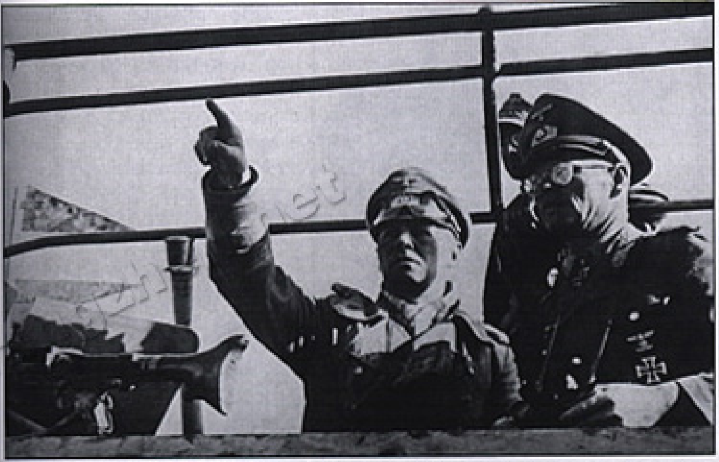
A Pz.Kpfw. III Ausf. H crosses the desert at speed in June 1942. In the last days of May the strength of Pz.Rgt.5 was the highest since the beginning of its campaign in Africa. There were 165 tanks under the command of the Panzer regiment's staff, including nearly 120 Pz.Kpfw. IIIs. Note the white emblem of the DAK painted on the front plate of the superstructure and how a coat of dust covers the sand camouflage.



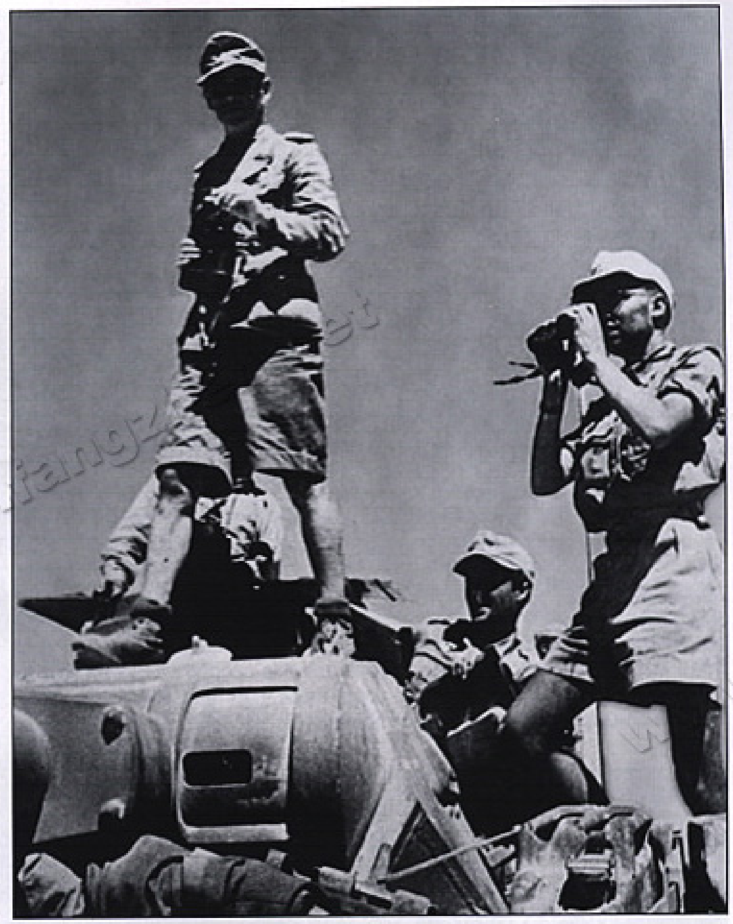
General Erwin Rommel rides in his Horch heavy touring car among Italian soldiers belonging to a unit equipped with Semovente M41 assault guns in June 1942. Later in the war some of these vehicles were taken over by German soldiers due to the lack of German StuG IIIs.



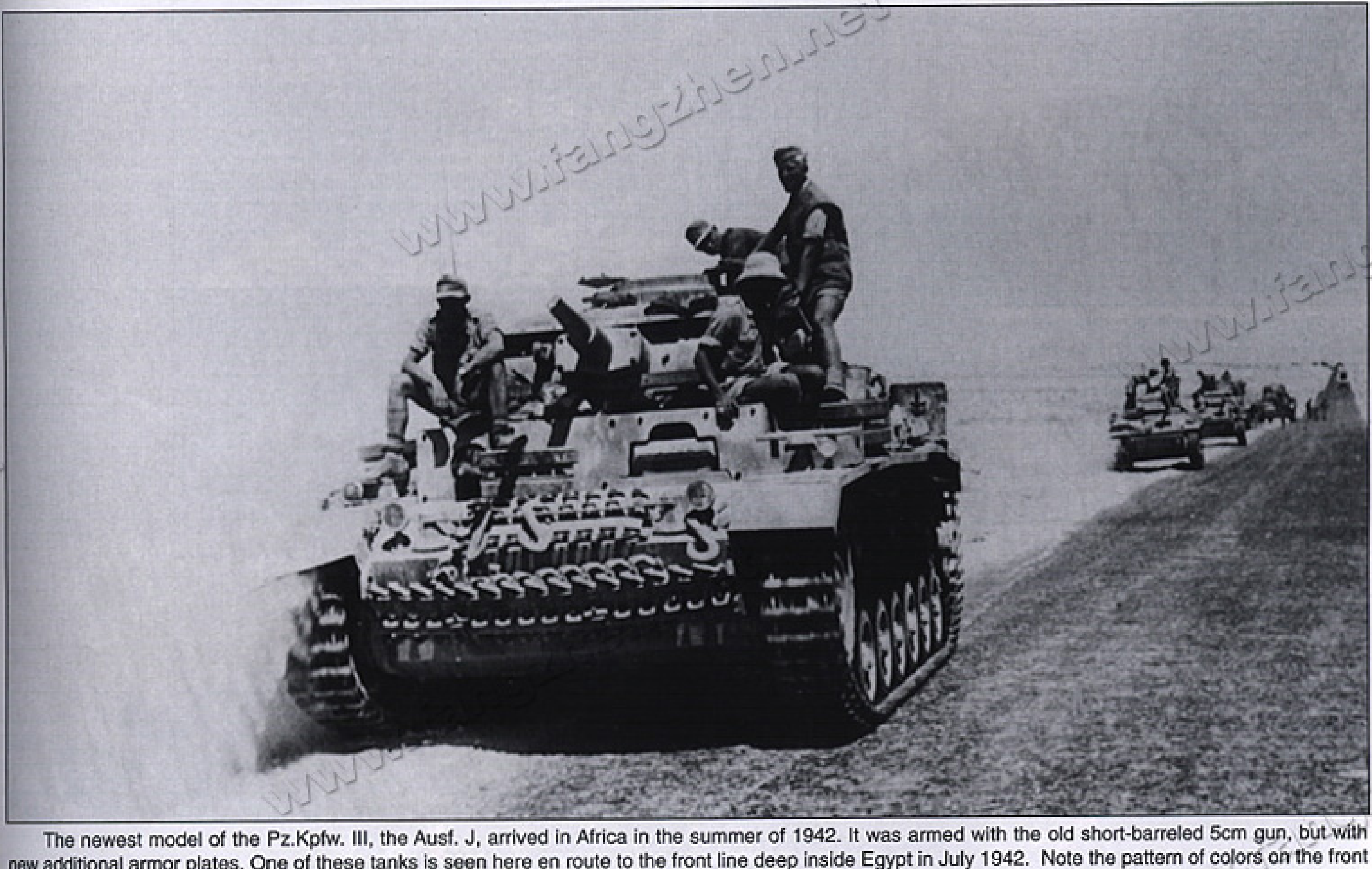
Another shot of Erwin Rommel riding in his famous Sd.Kfz. 250/3 with the name "Greif" painted on the sides of the combat compartment in July 1942. This photo, together with one or two others, clearly shows that the vehicle was covered with additional camouflage, probably in green-gray (RAL 7008), consisting of spots. The frame antenna was in the standard color of dark gray. The name "Greif" was painted in red with a white outline on the left side, while the one on the right was a white outline only.



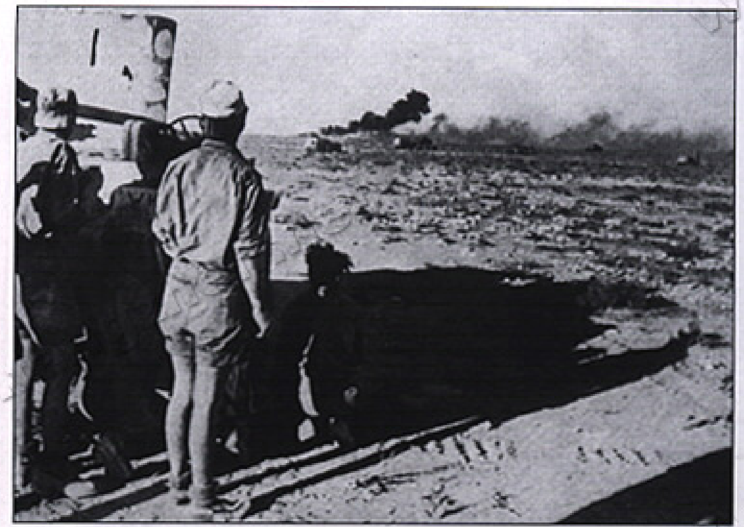
General Erwin Rommel, seen here with General Georg von Bismarck, directs a battle from the combat compartment of a Sd.Kfz. 251/6, probably von Bismarck's vehicle. The "Hanomag" still has the remains of its original dark gray camouflage in places where the new coat of sand paint was not applied. Due to a lack of equipment and water, the sand paint was usually applied as a paste with brushes, as is visible in this photo. The three-color lance pennon (from top to bottom: black, white and red) above the machine gun shield indicates the staff of 21.Panzer-Division.



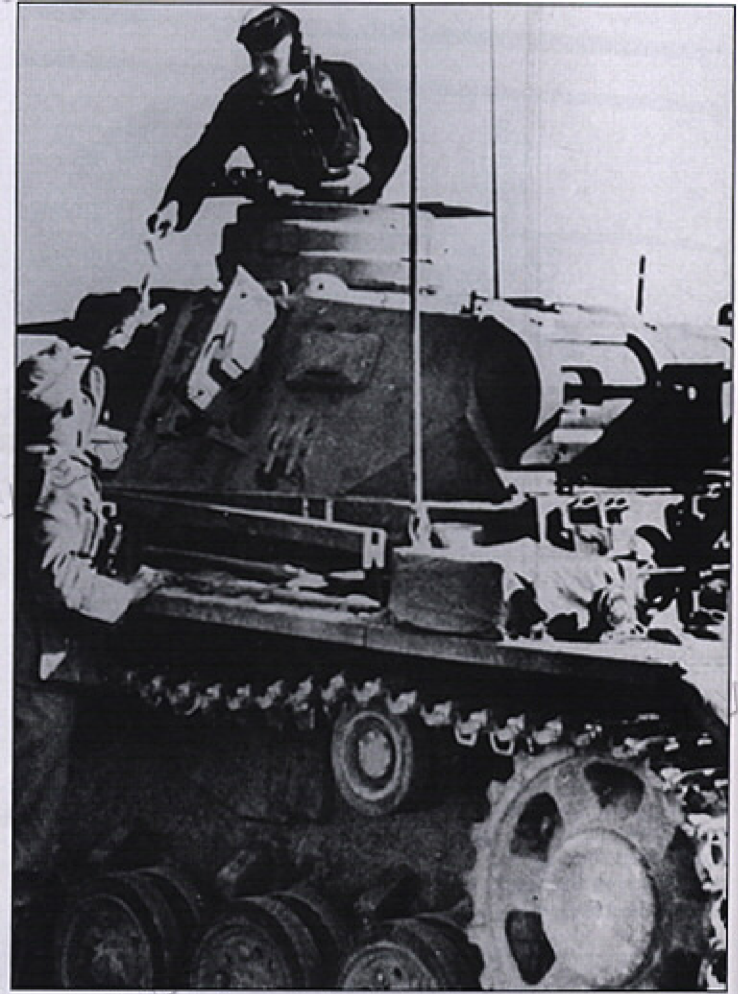
Standing atop the turret of a tank in July 1942, General Georg von Bismarck, the commander of 21.Panzer-Division, surveys the "no-man's land" between German and British units in the El Alamein region. The tank on which von Bismarck is strolling is a Pz.Bef.Wg. III, which the general occasionally used. Von Bismarck died on the first day of the offensive near Alam Halfa during the night 30/31 August 1942 while commanding "Kampfgruppe Bismarck", which was composed of his 21.Panzer-Division and 164.leichte-Division.



The newest model of the Pz.Kpfw. III, the Ausf. J, arrived in Africa in the summer of 1942. It was armed with the old short-barreled 5cm gun, but with new additional armor plates. One of these tanks is seen here en route to the front line deep inside Egypt in July 1942. Note the pattern of colors on the front plate of the superstructure, which looks like camouflage composed of two different paints: sand (RAL 8000) and green-gray (RAL 7008). Such paint schemes were very rarely seen on DAK vehicles. The two-tone camouflaged armored fighting vehicles are usually seen in photos taken in the middle of 1942. During Operation "Venezia" the DAK suffered the loss of 175 Pz.Kpfw. IIIs out of a total of 233 destroyed tanks. But at the same time, German tank crews claimed 790 enemy tanks and 170 other armored fighting vehicles.

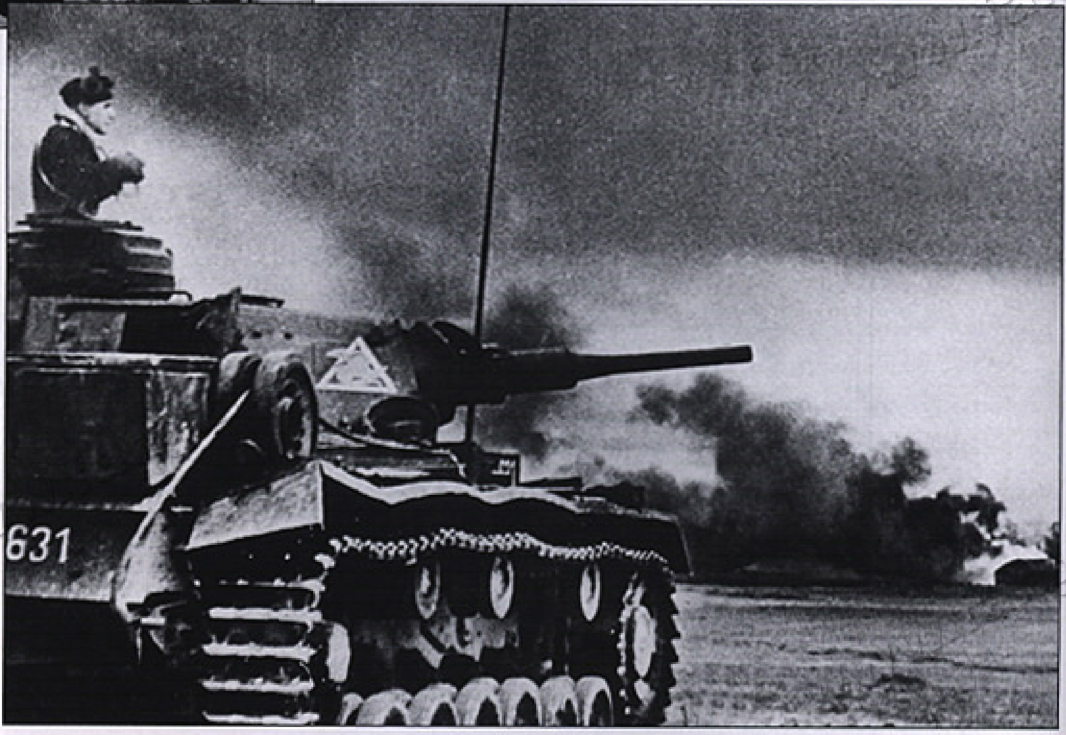


The killing ground at Acroma seen from afar in July 1942. The strange vehicle carrying a Wehrmacht license plate in the foreground is a British-made cross-country car with an anti-tank gun installed on it. The vehicle almost certainly wears British camouflage covered with spots in German sand color (RAL 8000 or RAL 8020), which was introduced in the spring of 1942. It's very difficult, however, to confirm if this second paint was sent to Africa in quantities large enough to cover more than few vehicles. Anyway, this British-German camouflage combination is well displayed on the gun shield.



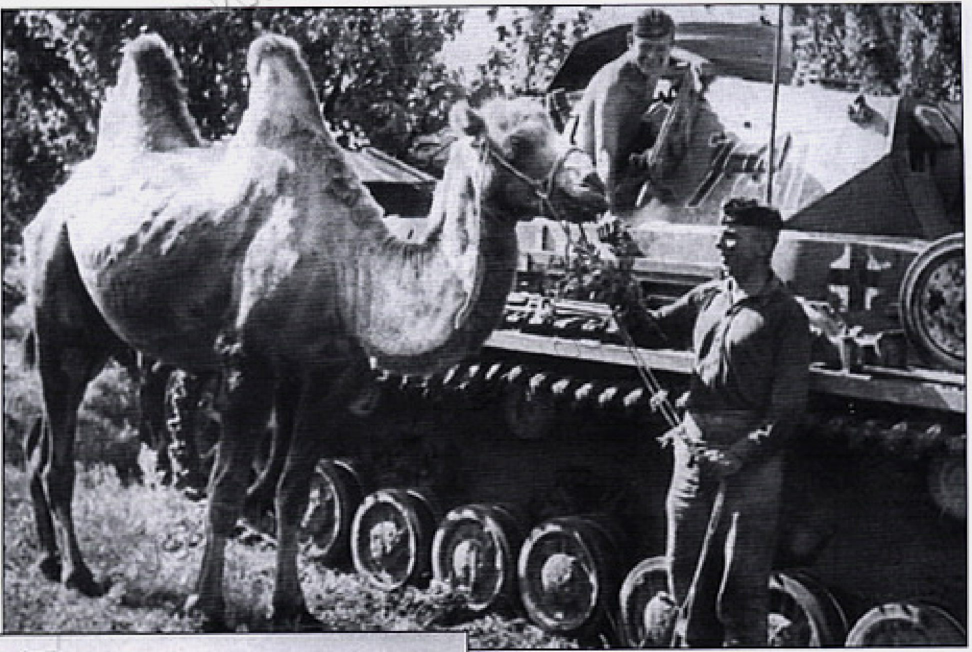
A staff officer in the cupola of a Pz.Bef.Wg. III Ausf. H from a Pz.Abt. belonging to 24.Panzer-Division relays some information to a soldier. Three antennae, including a frame antenna, are clearly visible. The vehicle is camouflaged with dark yellow paint, which was typical for German vehicles of this division on the Eastern Front in June-July 1942. It also carries a small white tactical number "110", which is partially obscured by camouflage. Note the additional armor plate installed on the front of the superstructure.

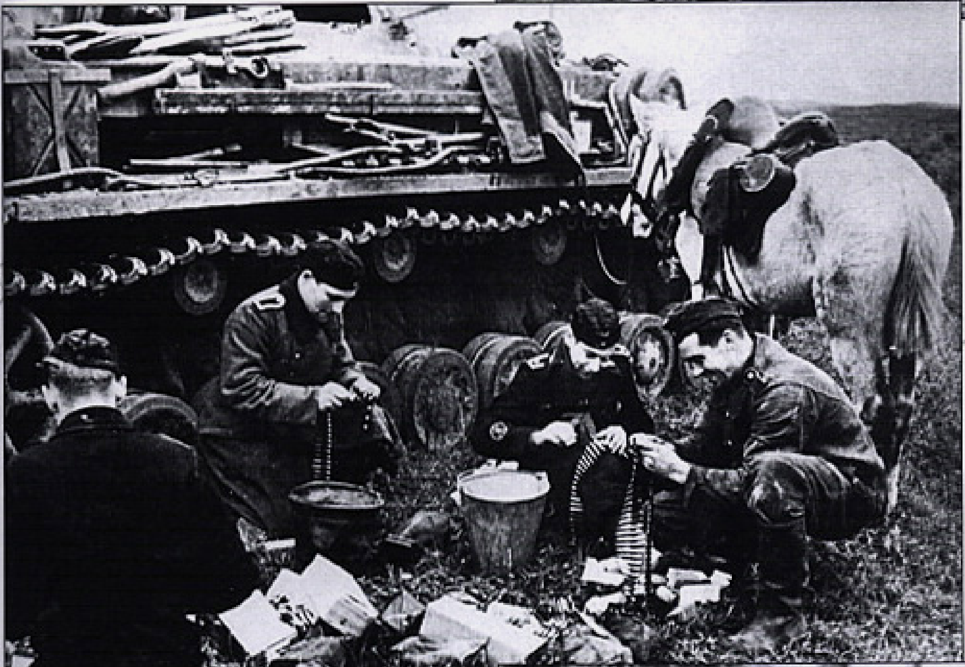
The crew of a Sd.Kfz. 10/4 anti-aircraft vehicle equipped with 2cm Flak 30 gun scans an incredibly wide and flat landscape during the DAK's march toward El Alamein. During "Venezia" the Axis forces captured 60,000 POWs, but suffered 5,000 German and 6,000 Italian losses.



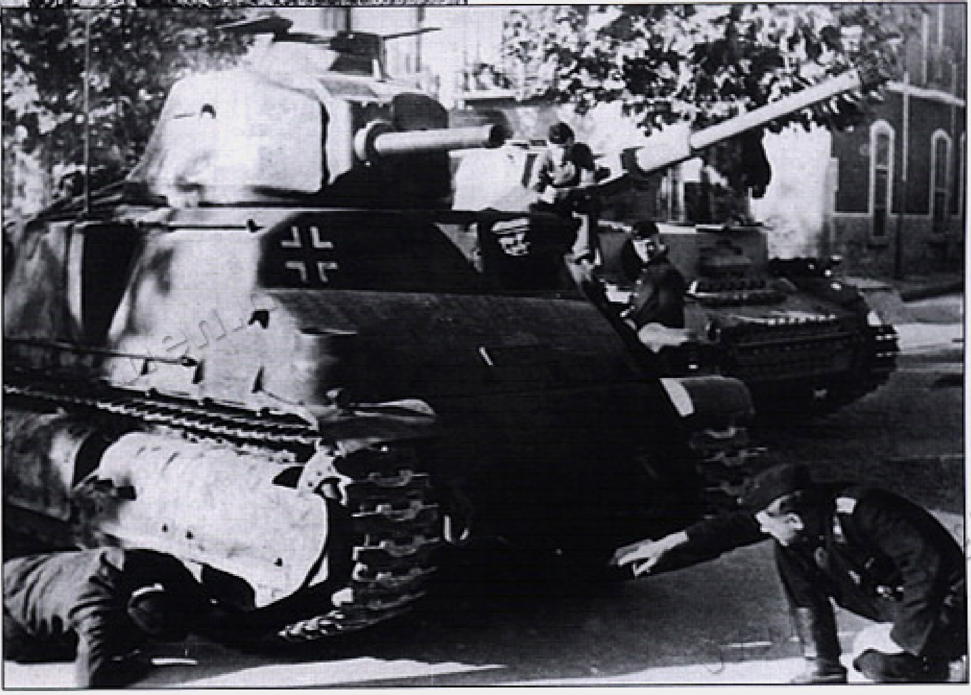
When tanks of Heeresgruppe Süd advanced on Stalingrad, the troops of Heeresgruppe Mitte stormed Soviet positions south of Rzhev. One of the units involved in this highly unsuccessful operation was 2.Panzer-Division. This photo shows a Pz.Kpfw. III belonging to II.Abteilung of Pz.Rgt.3 from this division. The tanks of this unit were well known for their colorful markings. A winged serpent, the emblem of the Abteilung, is prominently featured on the turret. The tactical number, "631", painted in white, was repeated on the front parts of the superstructure sides, where other tactical markings have been painted near the national cross.

Two tank crewmen amuse a camel on a sunny day in August of 1942. This photo was not taken in North Africa, but somewhere in the Don bend area of the Eastern Front. Camels were often used to transport supplies in southern Russia. Surprisingly, camels were also seen later in East Prussia during the Soviet offensive in the winter of 1944/45. The tank carries the three-digit tactical number "741" painted in black with a white outline. Note that a portion of the national cross has been scraped.

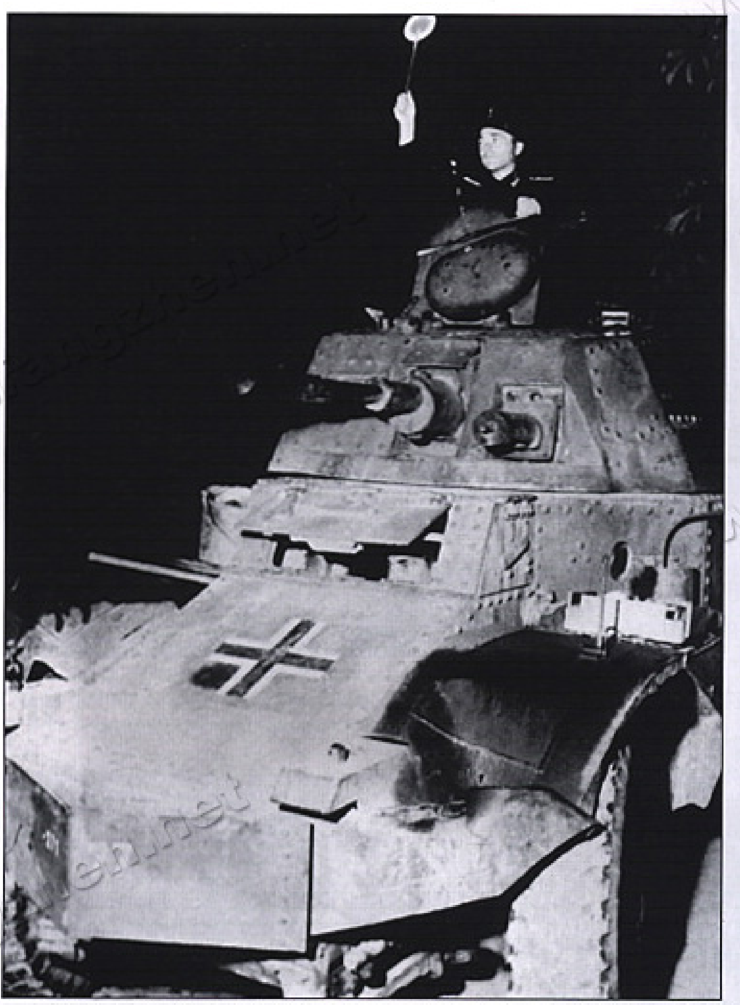




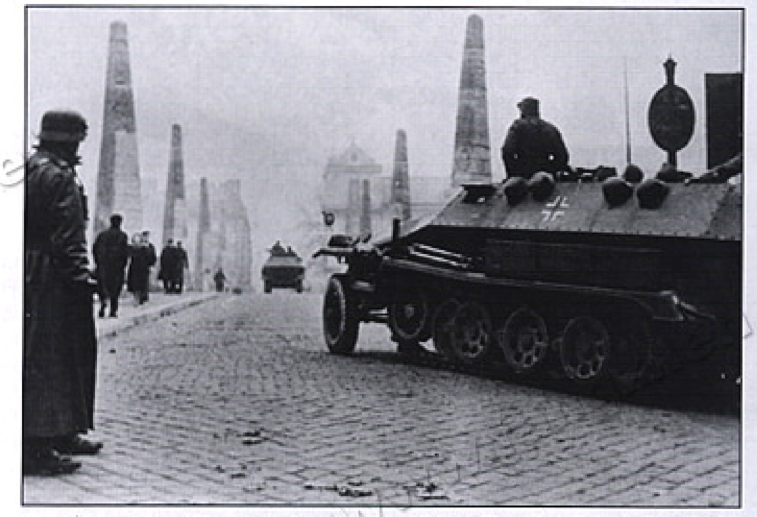
Soldiers load ammunition into machine gun belts while they prepare a Pz.Kpfw.IV for combat in the southern part of Soviet Union in October 1942. At that time the Pz.Kpfw. IV was still one of two main types of German tank, and it replaced the Pz.Kpfw. III early in 1943.



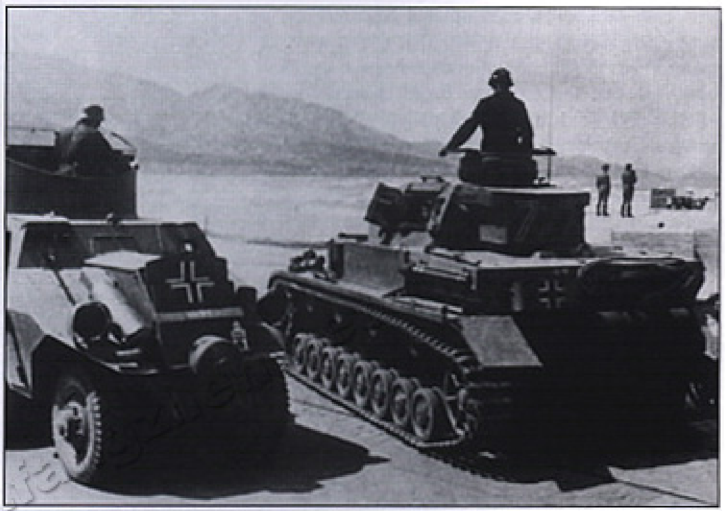
In November 1942 the Germans launched Operation "Anton" in southern France, which involved many armored vehicles of reserve and training units based in France. Many of them were using French vehicles, like this Somua S-35, for example, that was captured by the Germans in 1940 and put into service by the Panzerwaffe for training purposes. The tank has standard German dark gray camouflage and features white national markings on the hull and the turret. A Pz.Kpfw. IV Ausf. G is visible in the background.



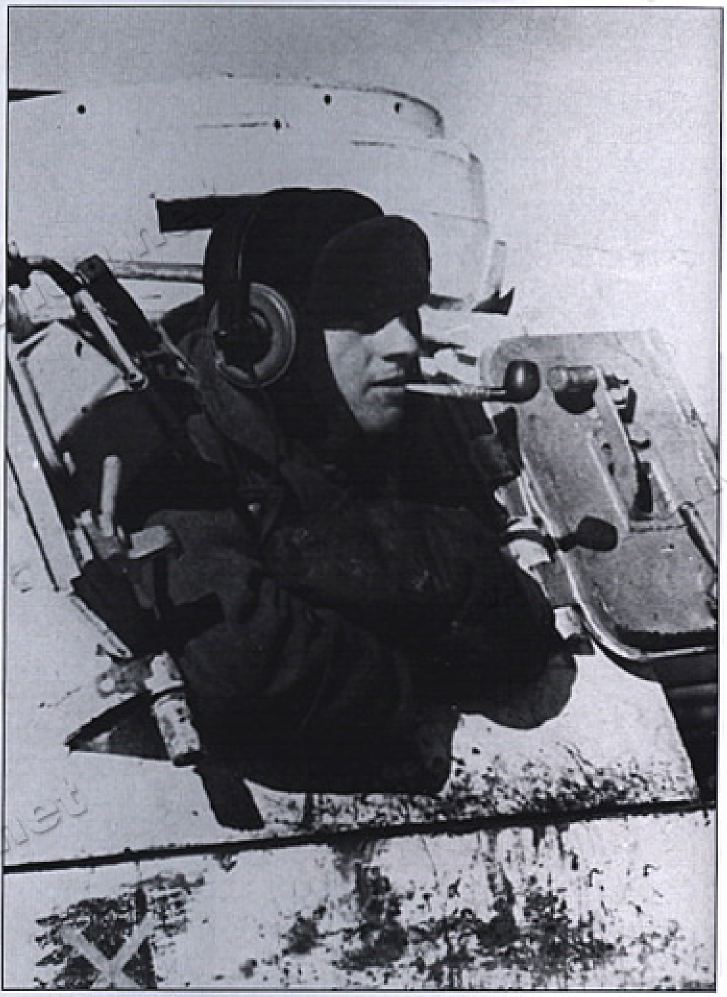
This captured Panhard P-178 is an example of another French armored fighting vehicle used during action against Vichy France in late 1942. This vehicle was re-designated Panhard P204(f) and carried German markings and a two-color camouflage pattern applied by its new owner. Here it is employed as the lead vehicle of a reconnaissance unit entering a Vichy road. Note the numbering seen on the cover of the hull. On the left is the small, white number "271", and on the right is a larger white "77". It is difficult to say what they represent.



An armored troop enters the southern French city of Saone in November 1942. The vehicles seen in the photo are Sd.Kfz. 251 Ausf. C armored personal carriers, the main type of such vehicles used by the Wehrmacht. The units employed in Operation "Anton" were small and few in number, but they were equipped with a variety of armored fighting vehicles since their mission was to penetrate into southern France as swiftly as possible. Therefore, they played a most important role in this action.

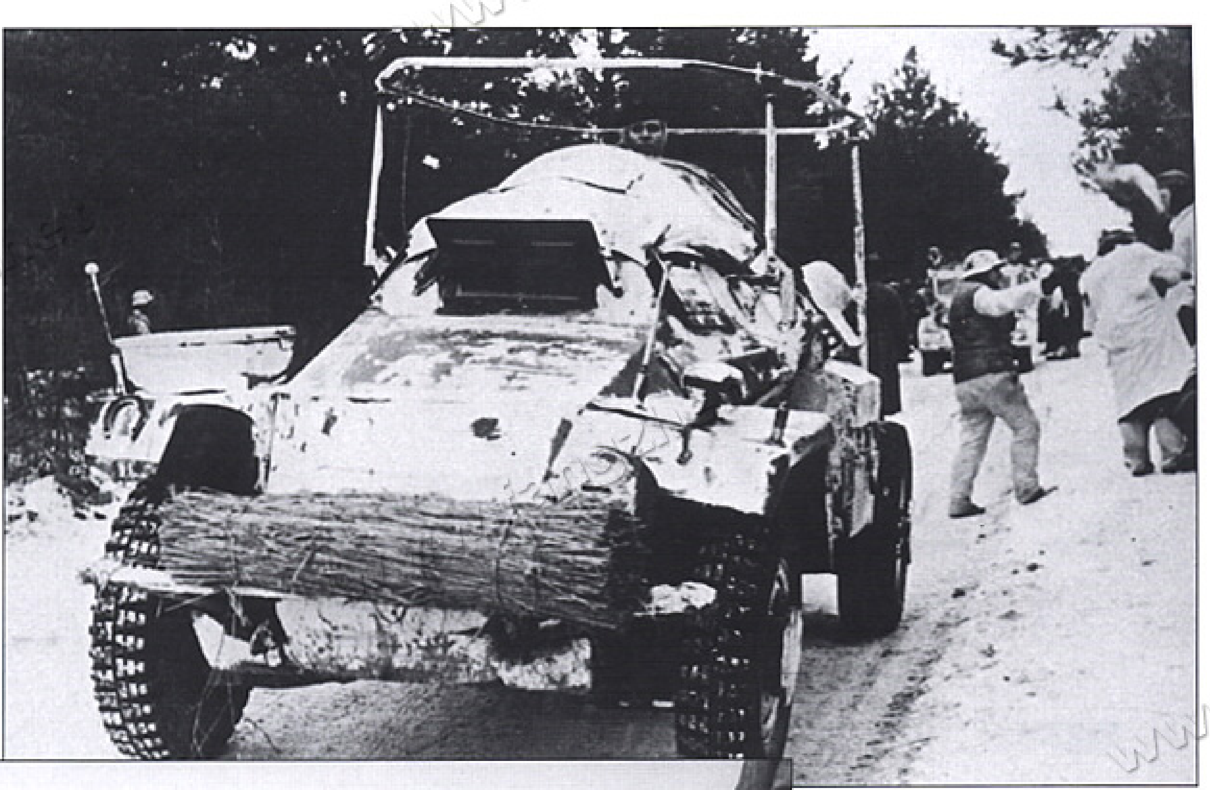


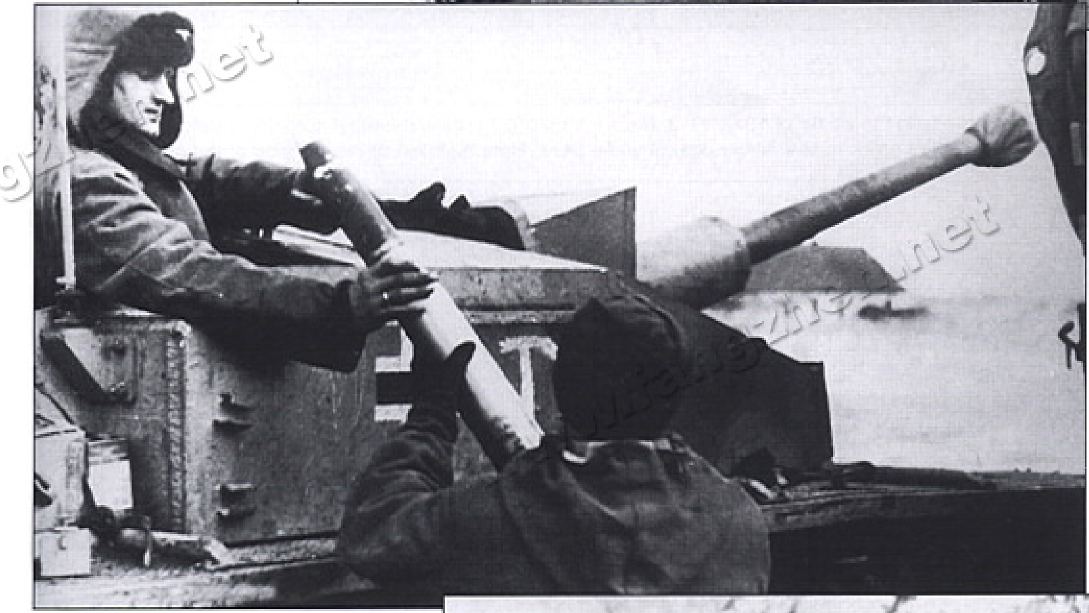
A Pz.Kpfw. IV Ausf. E or Ausf. F1 with a short-barreled gun passes by a heavy AGDZ armored car on a street near the Mediterranean coastline of southern France. Both vehicles carry the same unit markings — a white tower with a gate.



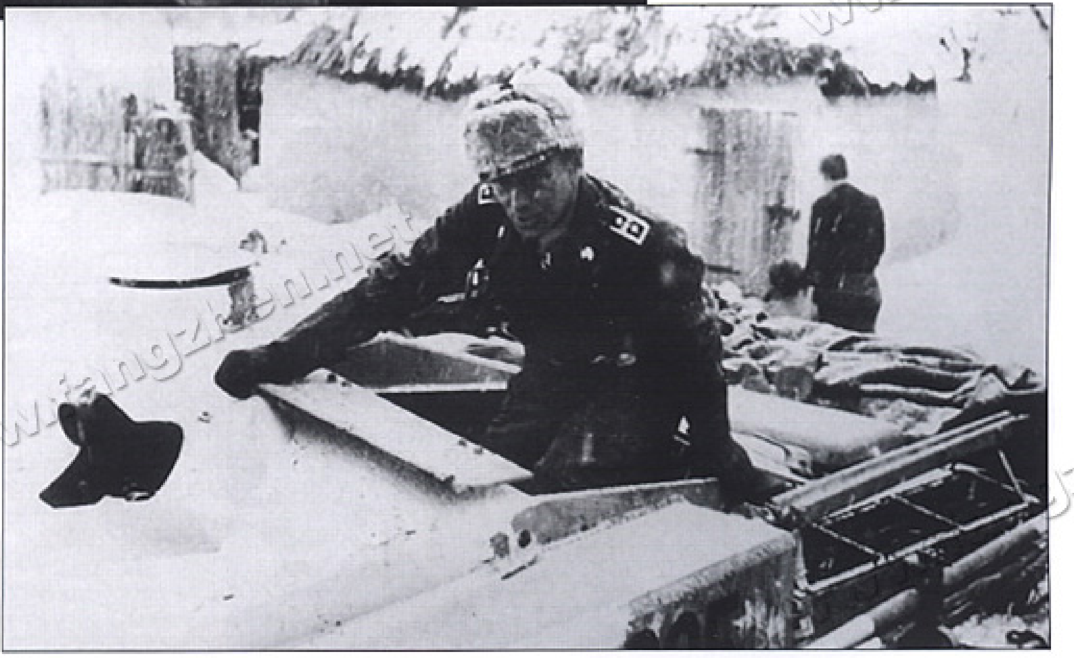
A German tank crew member in Russia enjoys a few rays of sunshine during the last winter days of 1942. He wears warm winter clothing first produced by the Germans around the beginning of 1942 when a lack of supplies forced the front-line troops to wear civilian clothes collected in Germany during emergency "winter assistance" activities. Note the interior details of the hatch and the unit insignia — a yellow "X" indicating 5.Panzer-Division. The tank is painted with a dark yellow (RAL 7028) background color, which was first introduced in September 1942, and covered with white camouflage.

A Sd.Kfz. 261 armored radio car photographed during a retreat in the central part of the Eastern Front in 1942/43. The vehicle's white winter camouflage only partly covers the vehicle. Sd.Kfz. 261s were usually used in small forward reconnaissance teams composed of three or four armored combat vehicles (Sd.Kfz. 222) and one radio vehicle, which was able to convey information immediately to the main force and then receive new orders. The frame antenna is shown in the raised position.

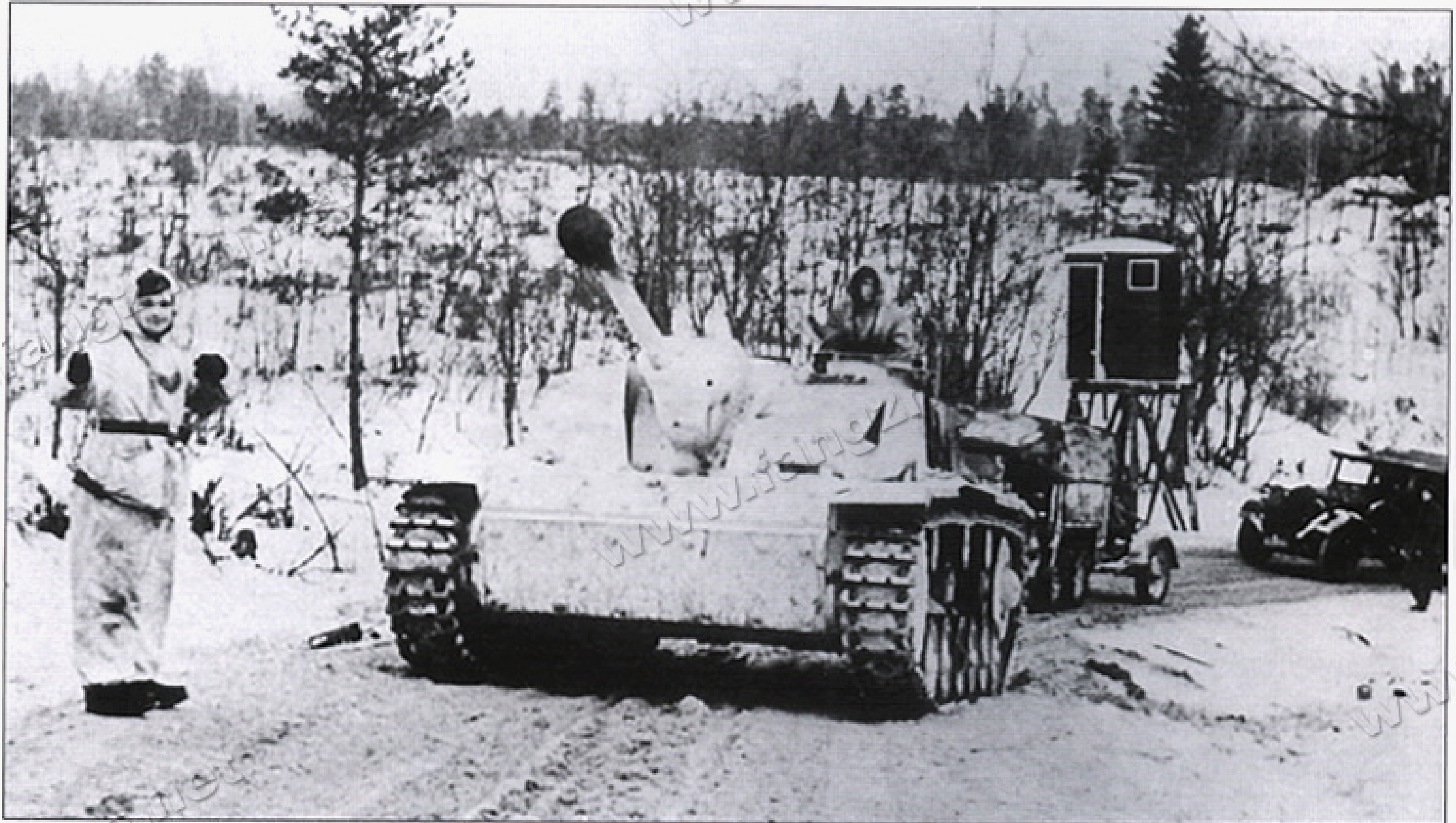




Crewmen load ammunition from a truck into their StuG III in the winter of 1942/43. The markings of this vehicle consist of a national cross and the white letter "D" written in chalk over the new camouflage color. Note the details of construction, especially the welding of the armored plates.



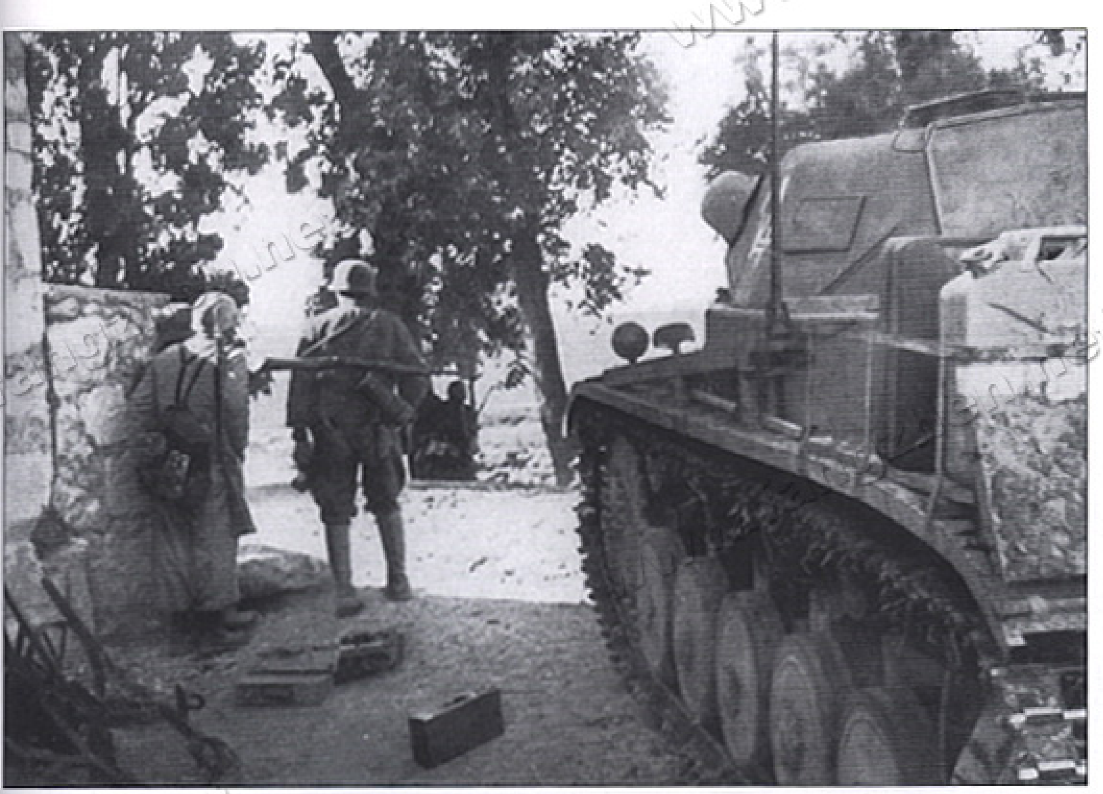
Oberwachmeister Johann Kochanowski from StuG.Abt.201 was photographed in January 1943 in the hatch of his StuG III Ausf. F, which is marked with black three-digit number. He won his Ritterkreuz on 15 October 1942 for successful combat against Soviet armor in the Don area.



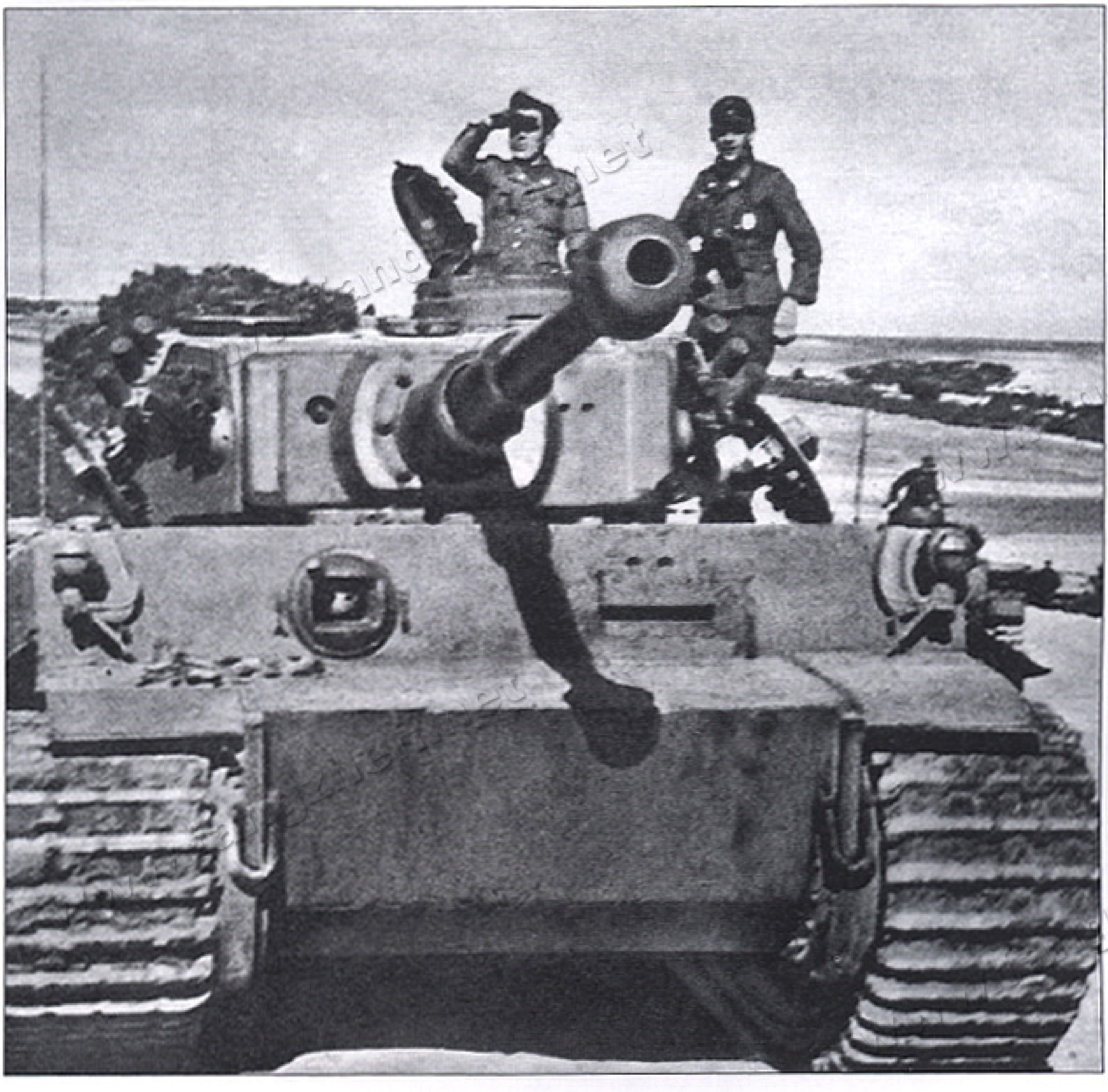
The StuG III Ausf. G entered service in the Panzerwaffe in the winter of 1942/1943, and very quickly became the most common version of this vehicle. This photo shows one of these tanks at the beginning of 1943 covered in a heavy coat of white paint. Note that part of the left side of the superstructure is not painted white.

On 4 January 1943 Unteroffizier Horst Naumann from StuG.Abt.184 received the Ritterkreuz for destroying 27 enemy tanks, 12 of them in three days, between the 1st and 4th of January, during heavy fighting in the Demyansk area.

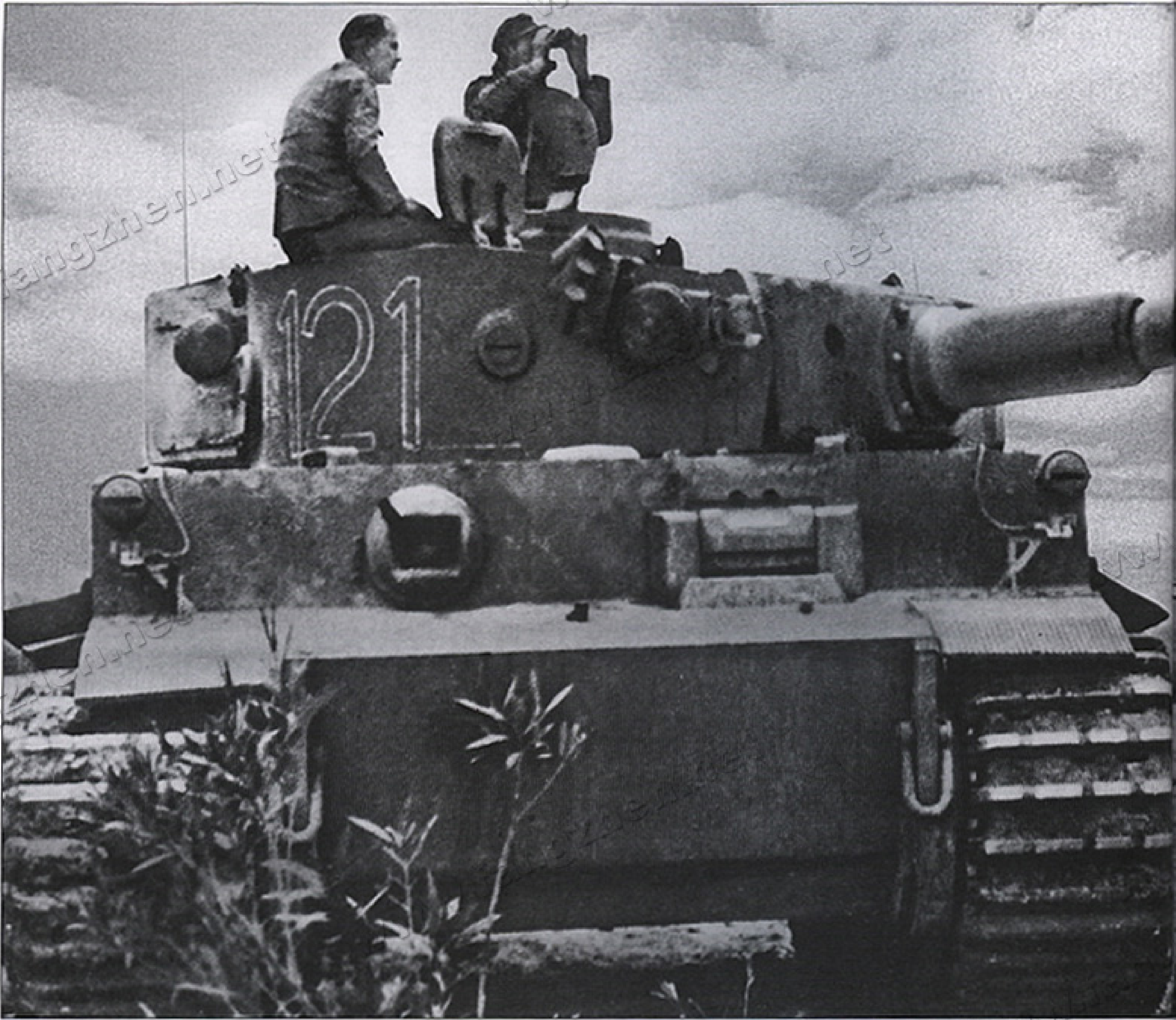
Ritterkreuz winner Oberstleutnant Huhse was photographed in Tunis in February 1943 near a Pz.Kpfw. III while talking to an officer from his unit. Note that the tank in the background is covered with a special net.



Somewhere in Tunis in February 1943 German infantrymen and paratroopers watch enemy positions under the cover of a Pz.Kpfw. II marked with interesting but illegible insignia on the turret. A special rack for jerry cans is visible close to the camera at right where a gray can for petrol and sand-colored can marked with white cross for water are stored.

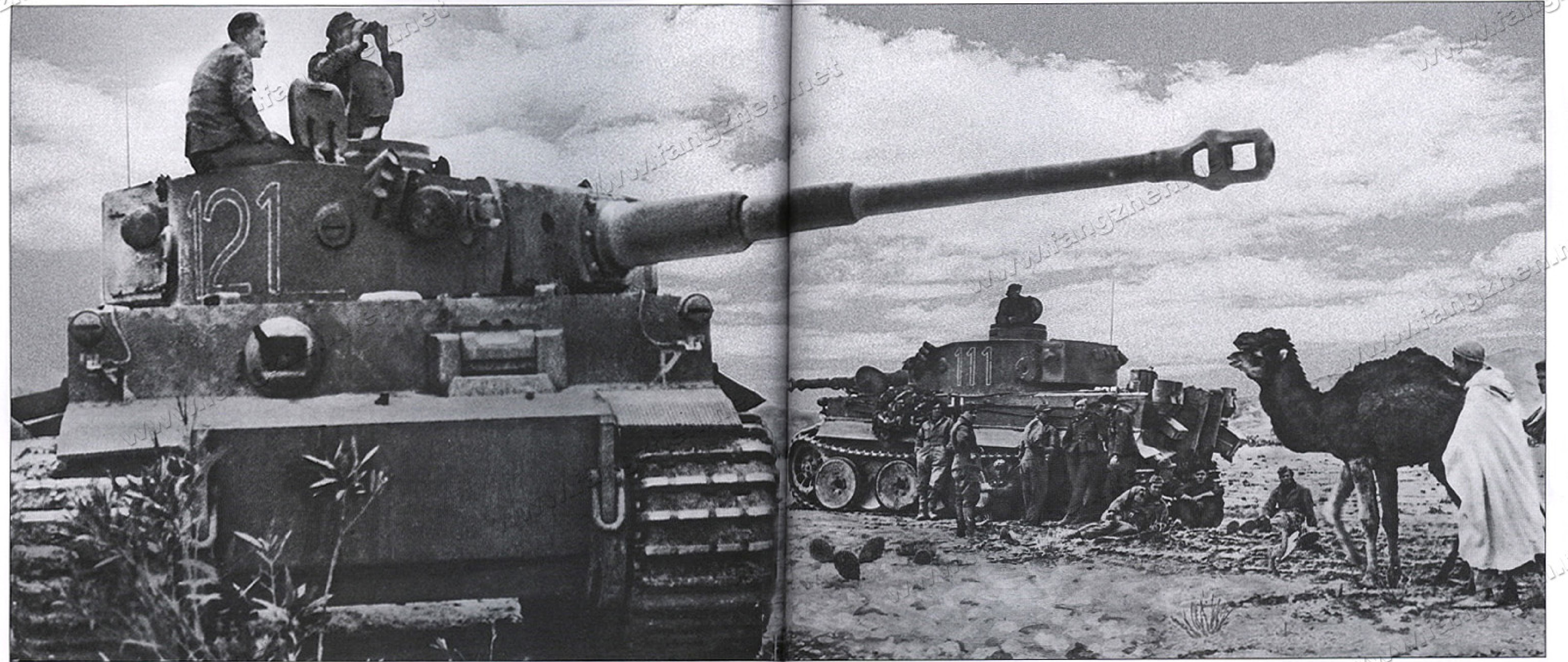


This Pz.Kpfw. VI Ausf. E of sPz.Abt.501 was photographed just after its arrival in Tunis in February 1943. The tank shows the typical sand brown color worn by the tanks in this unit. Some vehicles were painted light olive green in the spring of 1943 to match the grassy hills of Tunisia. Note the unit's elaborate field modification of placing the Bosch headlights in a new position on the front plate of the superstructure.



This photo shows the meeting of a steel "Tiger" with soft-skinned camels among the hills of Tunisia. The tanks are marked with the standard three-digit numbering system used in sPz.Abt.501. The large numbers are painted in red with white borders.

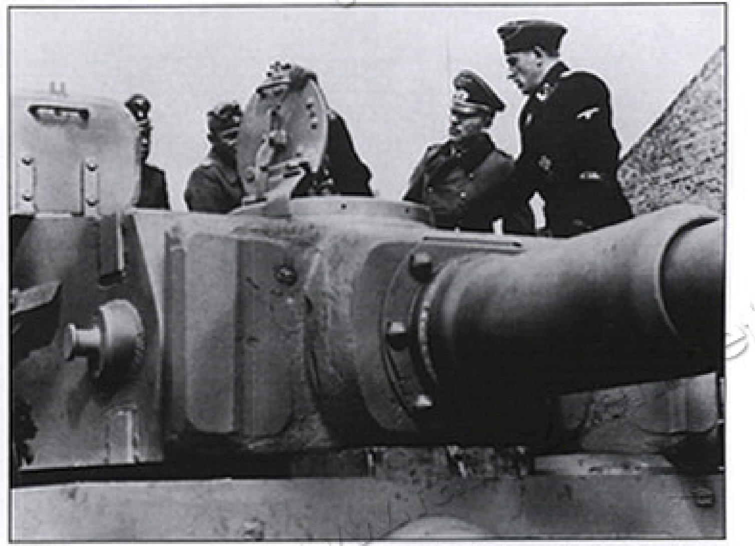
Tigers on the march in Tunis. The first Tiger unit to arrive and fight in North Africa was sPz.Abt.501. The unit was transferred to Pz.Rgt.7 of 10.Panzer-Division in late February 1943. Under the command of General von Broicha, 10.Panzer-Division was the newest armored unit of the Panzerwaffe in North Africa in 1943. It was much better equipped and armed than the other armored divisions of the DAK. This did not help, though, and the Tunisian campaign was the last operation for 10.Panzer-Division in WWII.



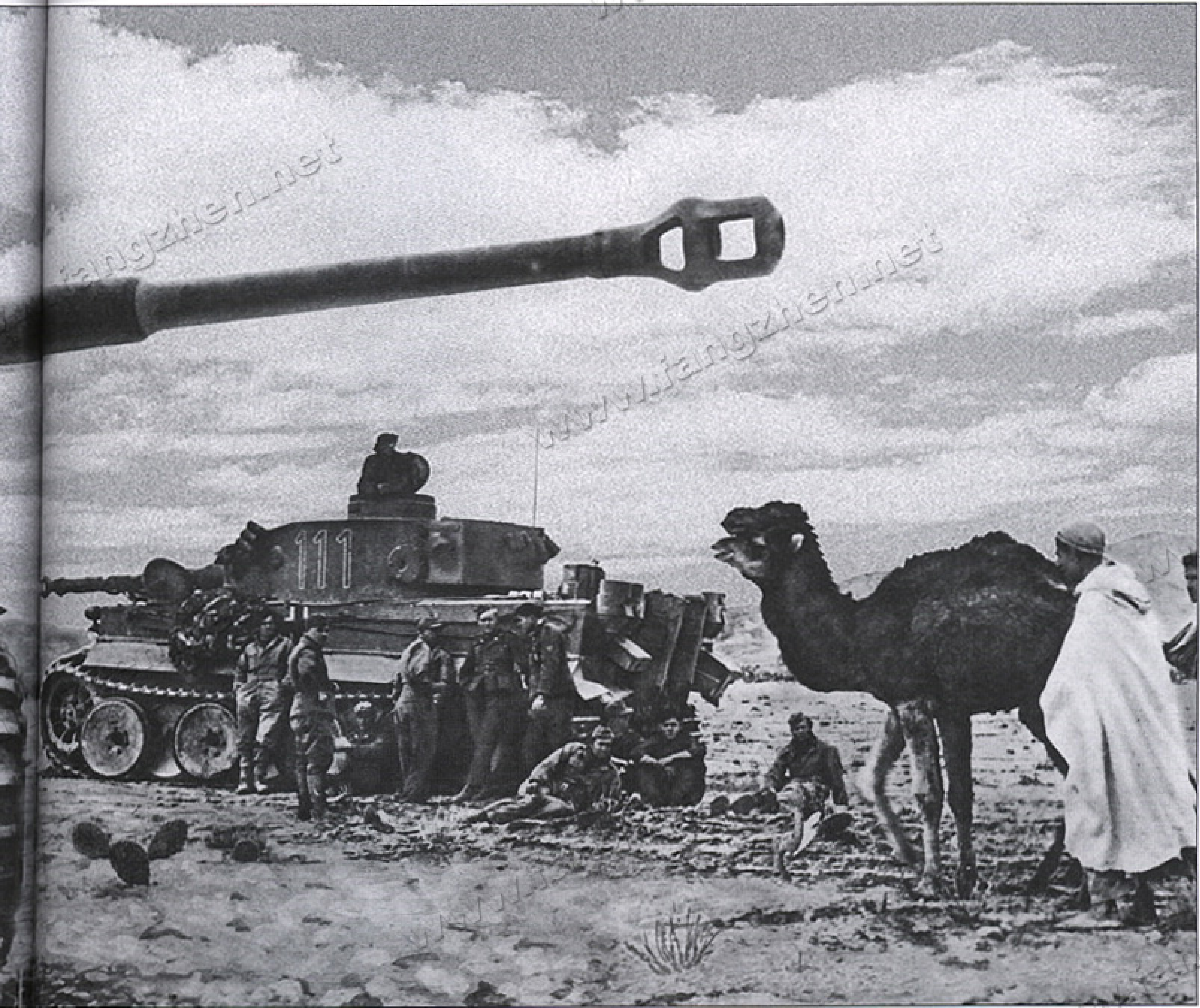
This photo shows the meeting of a steel "Tiger" with soft-skinned camels among the hills of Tunisia. The tanks are marked with the standard three-digit numbering system used in sPz.Abt.501. The large numbers are painted in red with white borders.

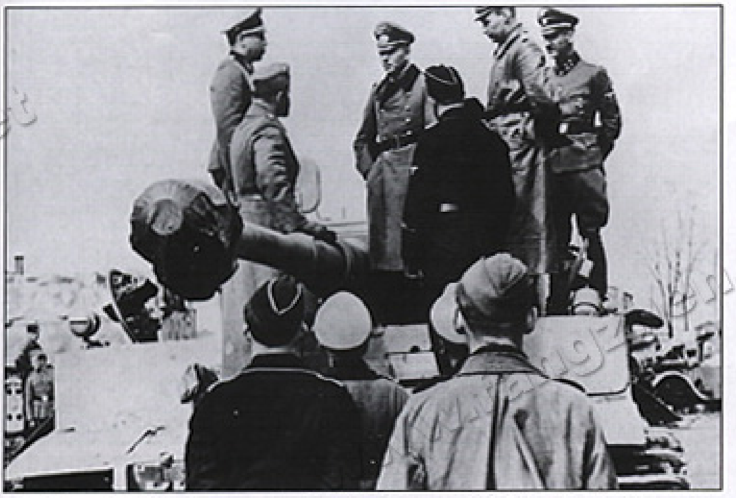
Tigers on the march in Tunis. The first Tiger unit to arrive and fight in North Africa was sPz.Abt.501. The unit was transferred to Pz.Rgt.7 of 10.Panzer-Division in late February 1943. Under the command of General von Broicha, 10.Panzer-Division was the newest armored unit of the Panzerwaffe in North Africa in 1943. It was much better equipped and armed than the other armored divisions of the DAK. This did not help, though, and the Tunisian campaign was the last operation for 10.Panzer-Division in WWII.

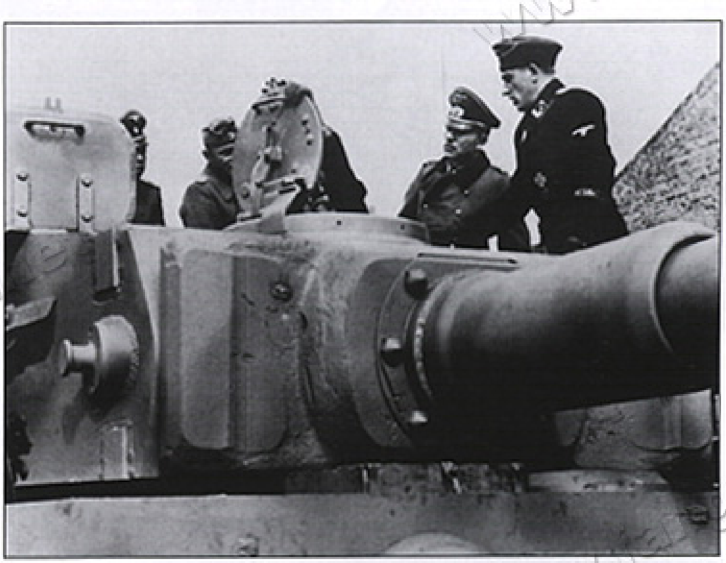
The most dangerous animal in the Panzerwaffe's "zoo" in 1943 was the Pz.Kpfw. VI "Tiger". This tank, which was heavily armored, well armed, and solidly constructed, dominated the battlefield from the beginning of its front-line service. Here we see General Heinz Guderian inspecting the Tiger company of 1.SS-Pz.Div. "LAH" in the late spring of 1943 during preparation for Operation "Zitadelle".



This photo provides us with another view of General Heinz Guderian inspecting a Tiger tank belonging to 1.SS-Pz.Div. "LAH". This close-up allows us to see the details of the mantlet of the impressive and powerful 8.8cm gun.

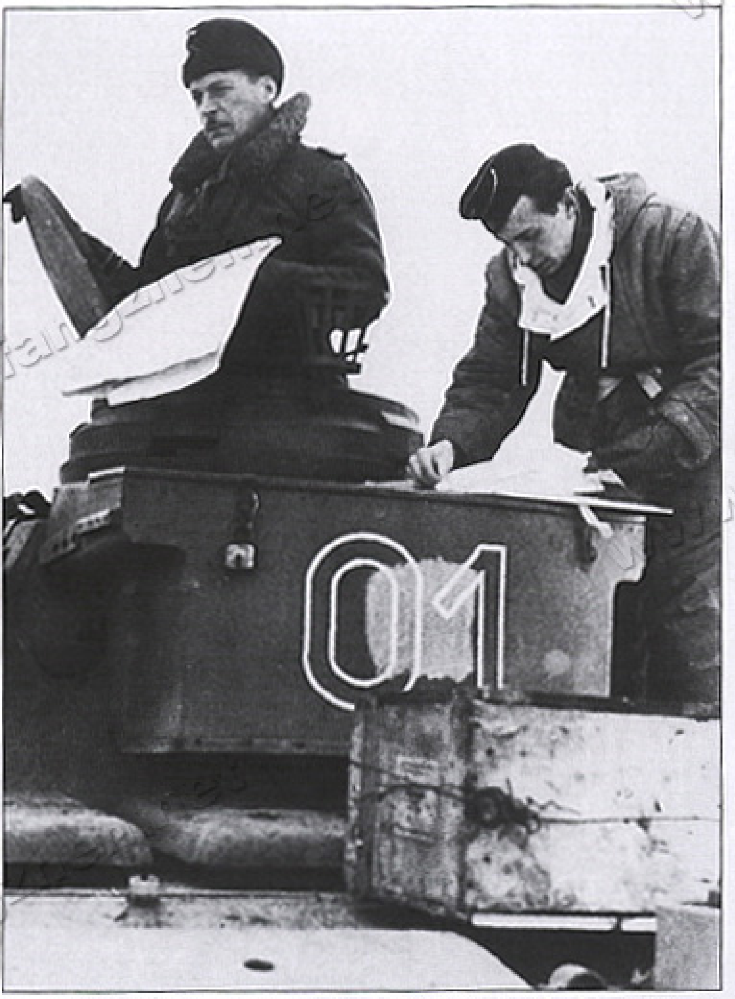




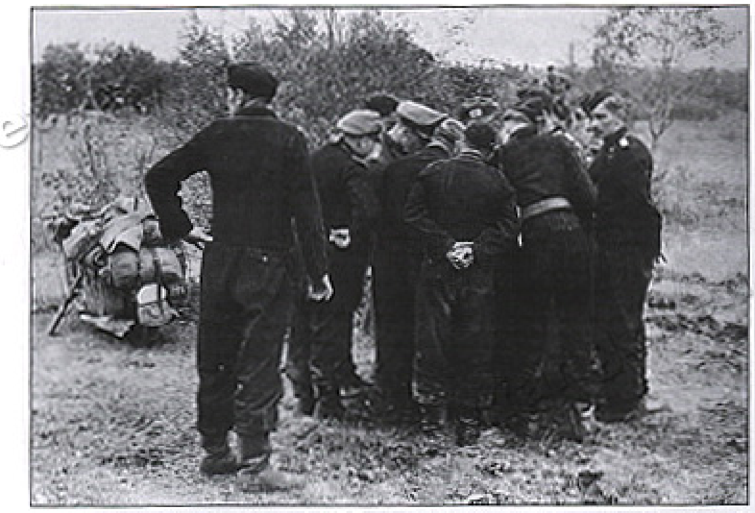


The most dangerous animal in the Panzerwaffe's "zoo" in 1943 was the Pz.Kpfw. VI "Tiger". This tank, which was heavily armored, well armed, and solidly constructed, dominated the battlefield from the beginning of its front-line service. Here we see General Heinz Guderian inspecting the Tiger company of 1.SS-Pz.Div. "LAH" in the late spring of 1943 during preparation for Operation "Zitadelle".

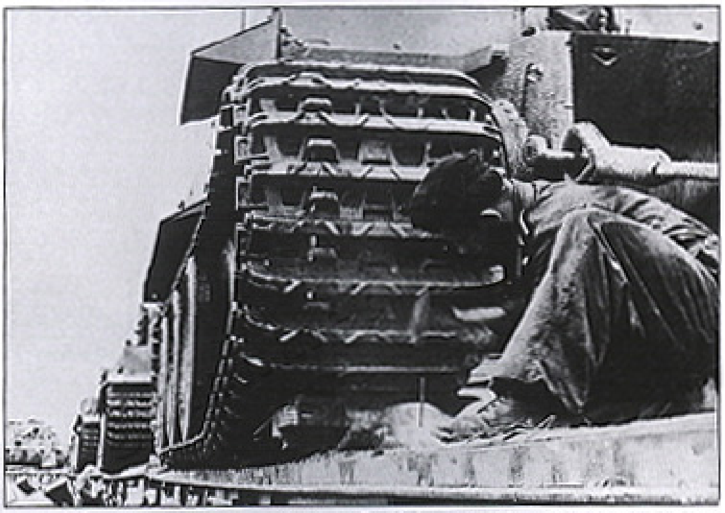
This photo provides us with another view of General Heinz Guderian inspecting a Tiger tank belonging to 1.SS-Pz.Div. "LAH". This close-up allows us to see the details of the mantlet of the impressive and powerful 8.8cm gun.



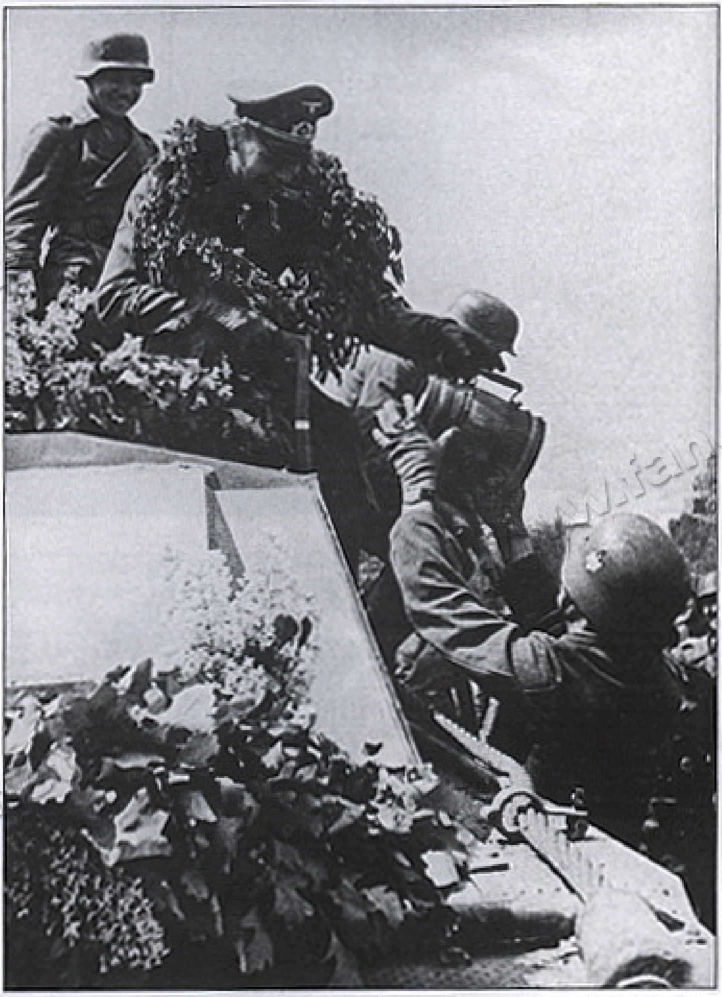
Oberst Graf Strachwitz, commander of Pz.Rgt. "Großdeutschland", consults a map during the fight for Kharkov in March 1943. He is seen here in the cupola of his Pz.Bef.Wg. III's turret, which is marked with the tactical number "01" on the stowage bin. Note the strange fixture attached to the cupola just below his left arm. Such items were often seen on the command versions of the Pz.Kpfw. III during this period. Graf Strachwitz often used command tanks because he spent a lot of time on the battlefield directly commanding his units.



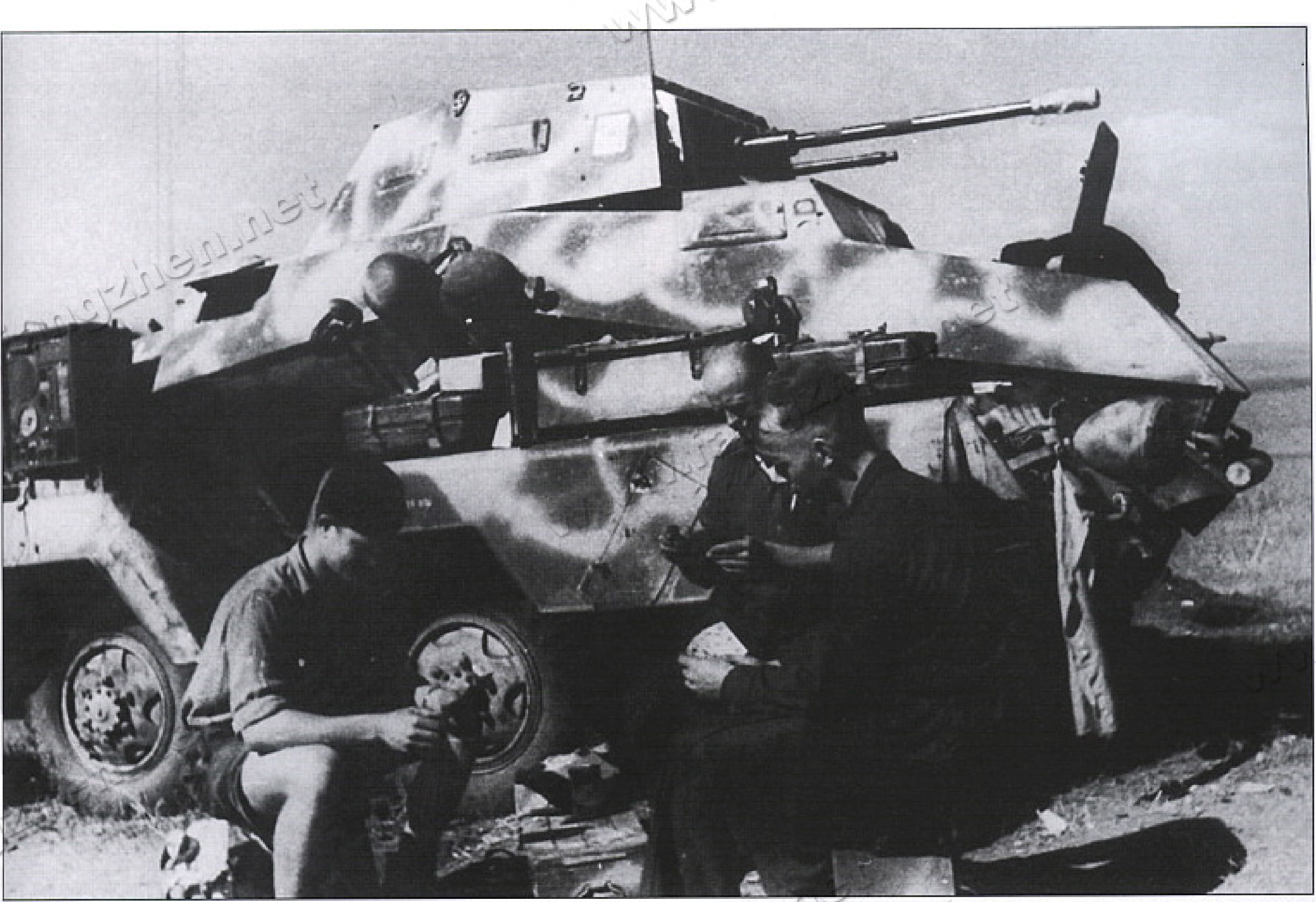
A group of officers and NCOs from infantry and armored troops of 7.Panzer-Division, most probably the reconnaissance battalion, discuss the objectives of upcoming combat. Of special interest is the motorcycle visible in the background, which has a divisional emblem painted on the right bag. It would be difficult to find another photo showing a motorcycle burdened with such a heavy load of military equipment.



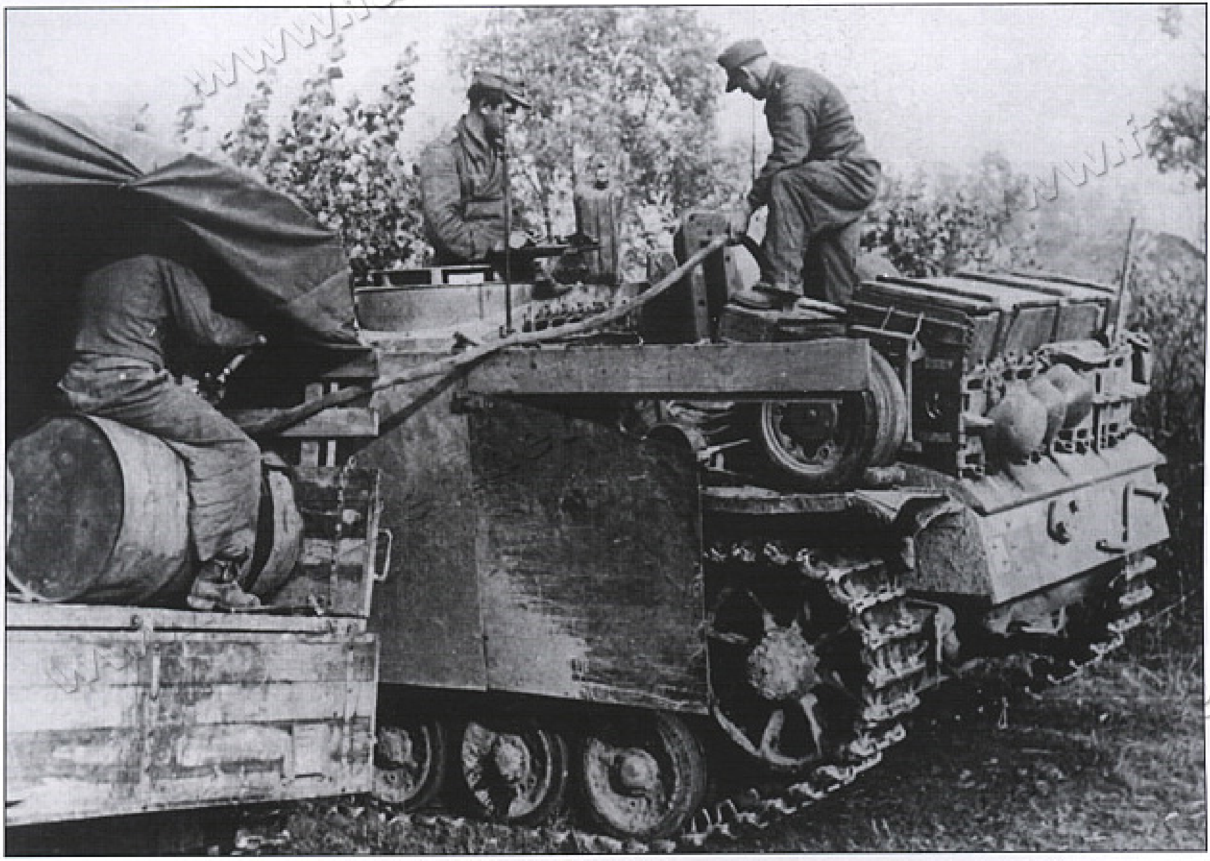
A German soldier prepares a Pz.Kpfw. VI "Tiger" tank for railway transport to an assembly area. Close inspection of the Tiger tanks shows that they were painted in a two-color camouflage scheme. Since the tanks were loaded onto the flat-bed cars almost directly from the front line, their combat tracks have not been exchanged for narrower ones, which was often done in the first months of a Tiger's service. The leading Pz.Kpfw. VI apparently has seen combat and suffered its first damage: part of the mudguard and one of the road wheels have been shot off, and a bullet has made a dent on the front plate of the hull.



Hauptmann Peter Frantz, the commander of StuG.Abt. "Großdeutschland", receives a present from his soldiers after winning the Eichenlaub (Oak Leaf) for his Ritterkreuz in April 1943. During the fight for Kharkov, Frantz performed well in command of his unit, which took part in the tank battle for Borissovka on 14 March. His crew destroyed 43 T-34s. There is no doubt that in a front-line situation a barrel of beer or rum would be more appreciated than the state decoration for bravery and good command skills.

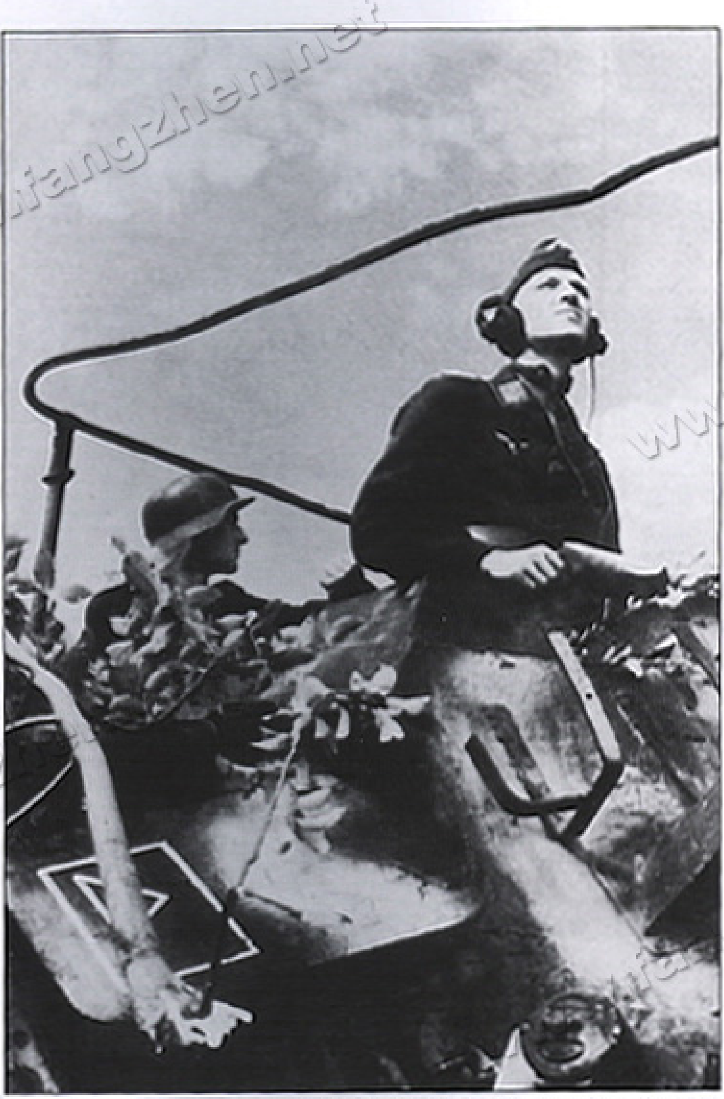


In the summer of 1943, in the Kursk bulge, crew members of a Sd.Kfz. 231 armored car play cards as they wait to receive orders over the radio receiver visible on the vehicle's mudguard at the extreme left. The vehicle is painted in dark yellow camouflage over a standard dark gray background and carries a unit emblem, the Ace of Hearts. Though the eight-wheeled armored cars supported the defensive fighting in August 1943, the order was issued to cancel production of the Sd.Kfz. 231, which followed a similar order dealing with the production of the Sd.Kfz. 222. Thanks to these decisions, the German Panzer divisions were deprived of reconnaissance vehicles, which were partially replaced by the reconnaissance model of the Sd.Kfz. 250.

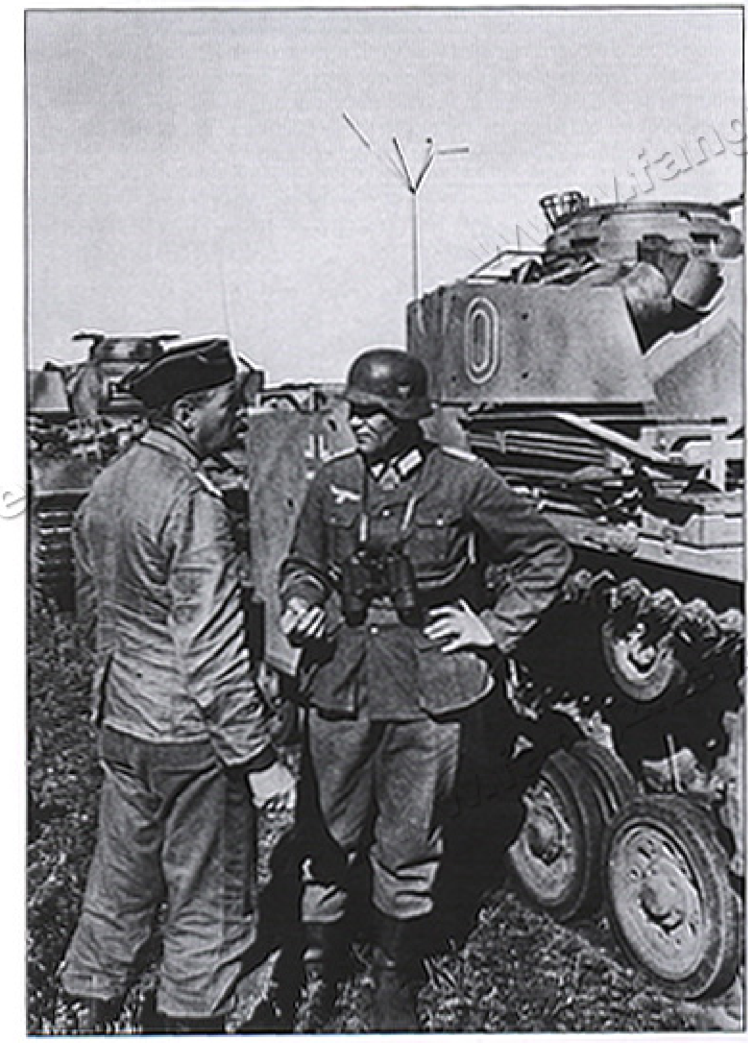


A StuG III Ausf. G of StuG.Abt.286 is refueled from an Opel Maultier vehicle using the simplest technique — a hand pump. Though this was time consuming, there were often no other options when units were involved in combat in the field. Note the unit emblem painted on the rear plate of the hull, just visible near the national cross.

General Hermann Hoth, seen here, commanded Pz.Ar.4 in the southern part of the front line on the Kursk bulge, and his formation achieved the best results during the July 1943 offensive. His army was composed of two armored corps and one army corps employed to guard the left flank of the Pz.Ar.

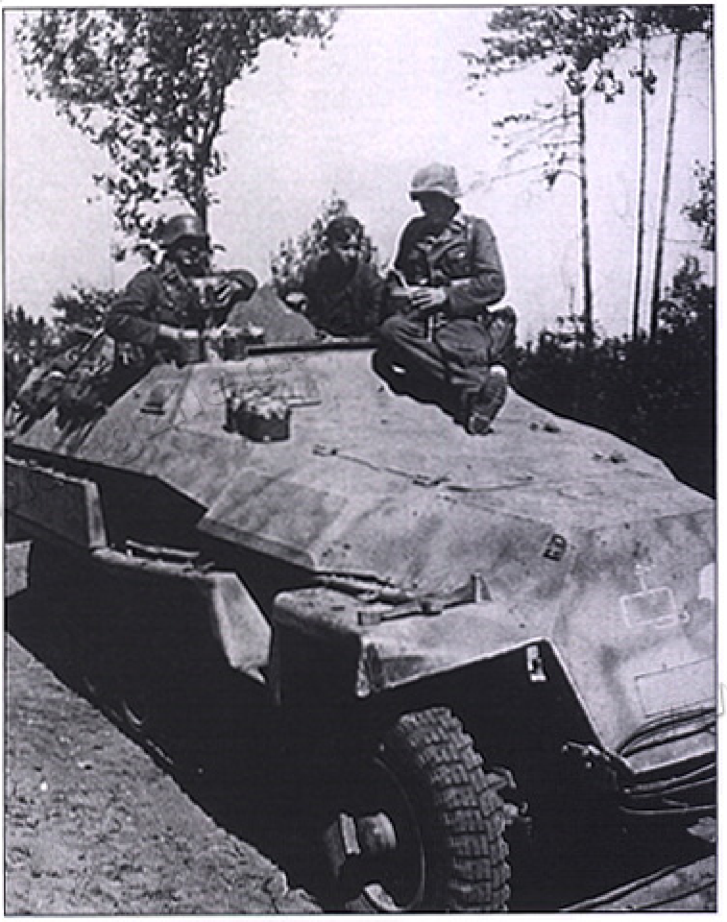


One of the main reasons for the early successes achieved by the Panzerwaffe was a well organized communication system between forward armored troops and the Luftwaffe, which provided tremendous support during battle. One of the vehicles used for such duties was the Sd.Kfz. 223 like the one seen here painted with dark yellow splotches over a dark gray background. Note the tactical sign.

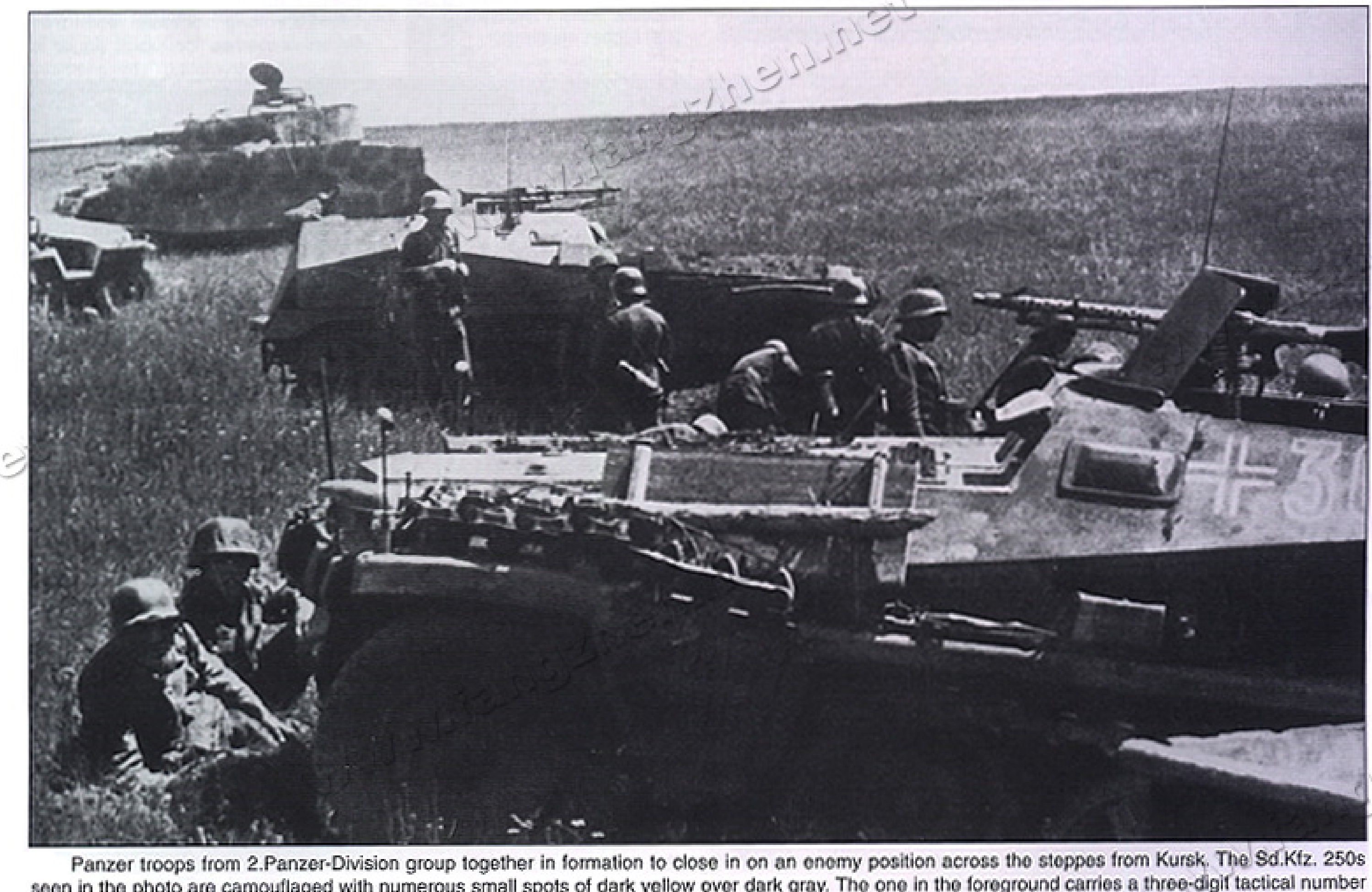


The commander of Pz.Rgt. "Großdeutschland", Oberst Graf Strachwitz (left), talks to Oberst Karl Lorenz, the Ritterkreuz winner and commander of Pz.Gren.Rgt. "Großdeutschland". Lorenz won his RK in the difficult winter fighting at the end of 1942, when he was wounded. The men are seen near a pair of Pz.Bef.Wg III Ausf. Hs prior to the beginning of Operation "Zitadelle". The nearest tank, which has the white "0" painted on the side skirt of the turret, is Strachwitz's tank. Strachwitz used "0" or "01" as the insignia for his command tanks. Karl Lorenz later received the Eichenlaub on 12 December 1943 for his successful leadership at Krivoi Rog in November 1943.

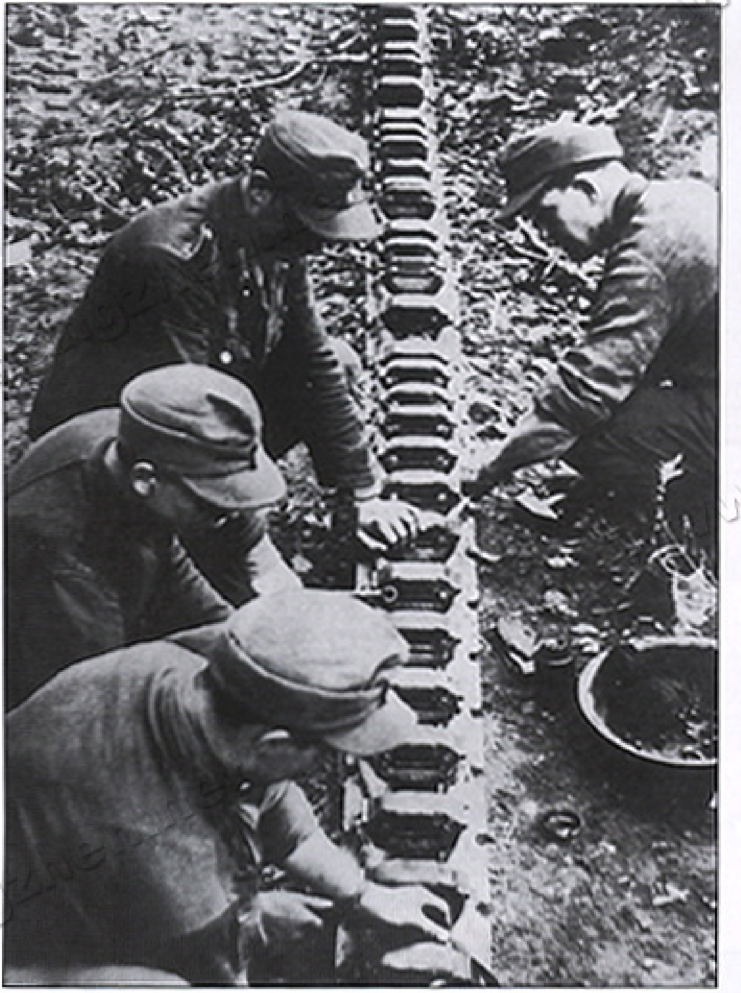
A German soldier scans the sky as he mans a communication point. This one is composed of two armored vehicles that are so well camouflaged with straw that it is difficult to say what type of vehicles they are.

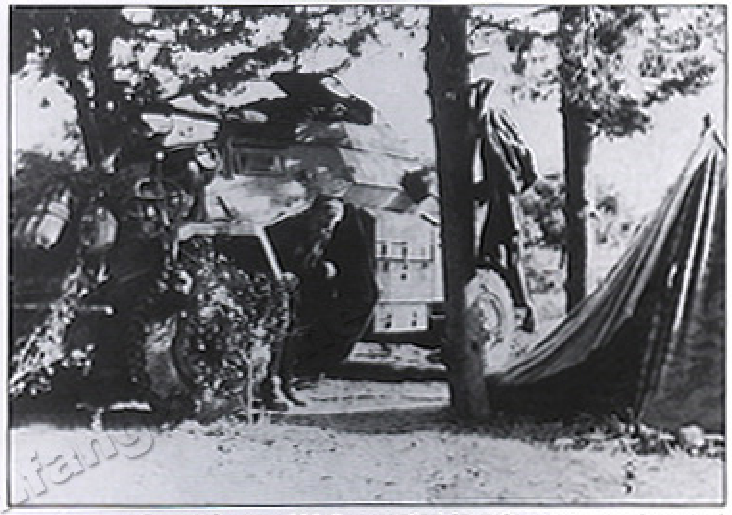


Soldiers of Pz.Gren.Div. “Großdeutschland” have a meal atop a three-color camouflaged half-track that displays the divisional emblem — the “Stalhelm”. The white tactical sign to the left of the white helmet indicates the 3rd company of a Panzer Grenadier battalion equipped with Sd.Kfz. 251s. Note that a space was prepared for a license plate, but it was not painted for some unknown reason. “Großdeutschland” was the only elite formation among the Wehrmacht's motorized divisions, but like nearly all other such units, this elite characterization was changed in the middle of 1944.



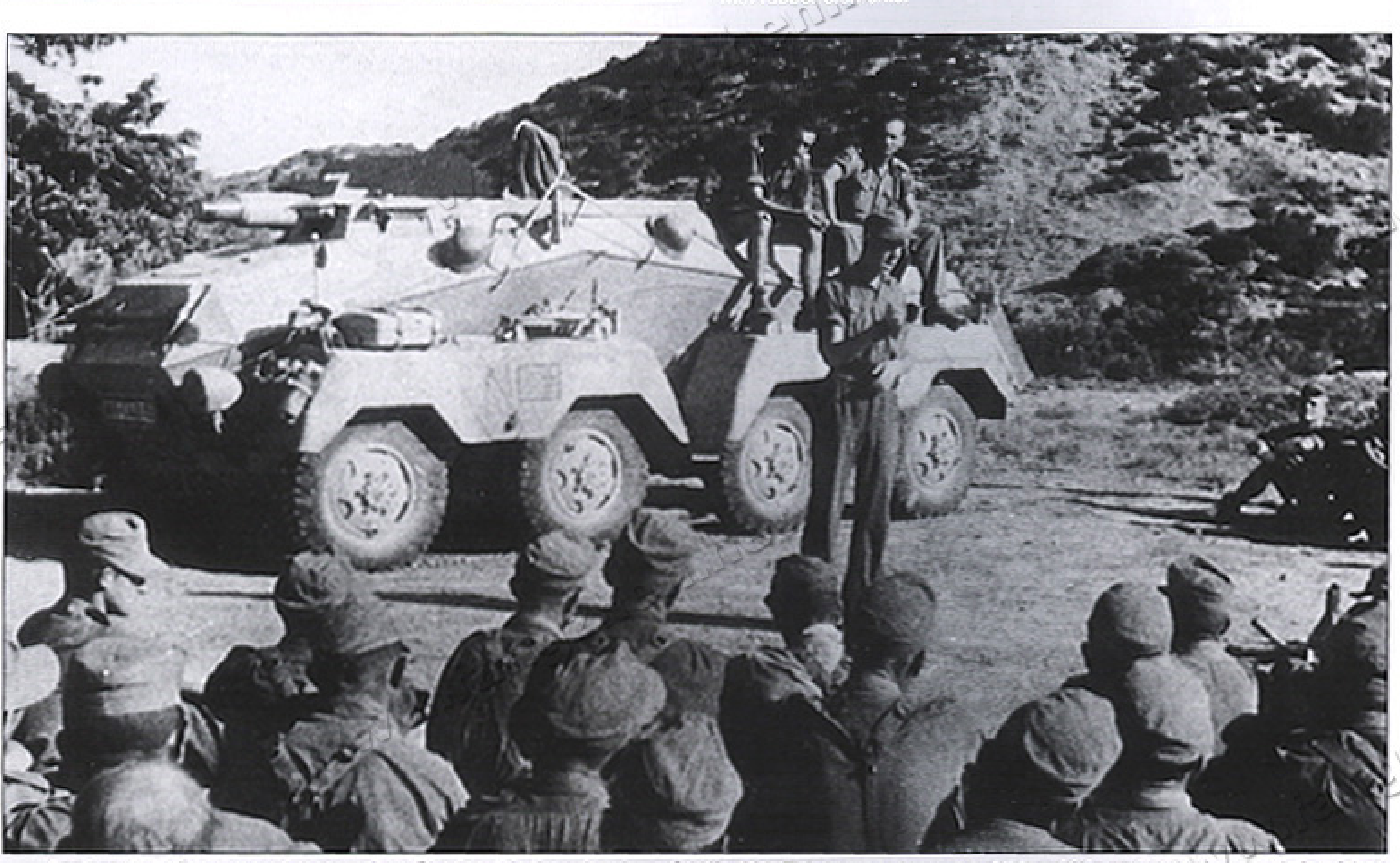
Panzer troops from 2.Panzer-Division group together in formation to close in on an enemy position across the steppes from Kursk. The Sd.Kfz. 250s seen in the photo are camouflaged with numerous small spots of dark yellow over dark gray. The one in the foreground carries a three-digit tactical number indicating a staff vehicle of the 3rd company. The Pz.Kpfw. IV seen in the background wears a typical camouflage scheme for this period composed of green patches over a dark yellow background, and it carries the Pz.Rgt.3 emblem on the turret side skirt.



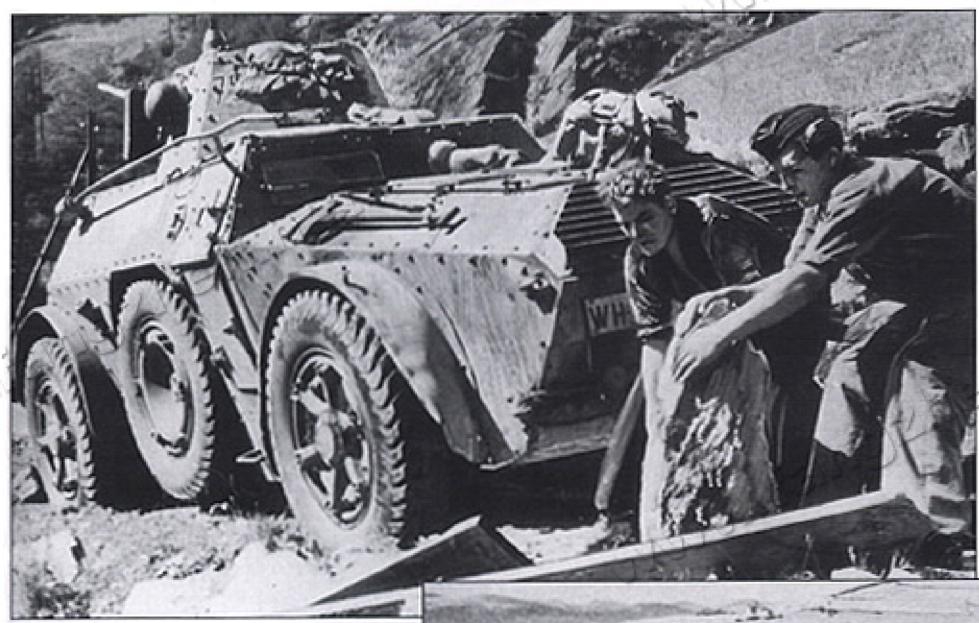


A camouflaged Sd.Kfz. 222 lies nestled in a forest on the island of Rhodos near its capital city in August 1943. Like nearly all of the armored cars that arrived on Rhodos, it has an inscription on the side of the superstructure near the helmet. Unfortunately, it is illegible. Usually they were painted in white paint in the Greek style. When the military situation in the Mediterranean became complicated, the Germans sent a small force commanded by General Klemann into its eastern region to fight against the British forces, which suffered a great blow in this area later that year. It was the last German offensive operation launched against the Western Allies that ended in success.

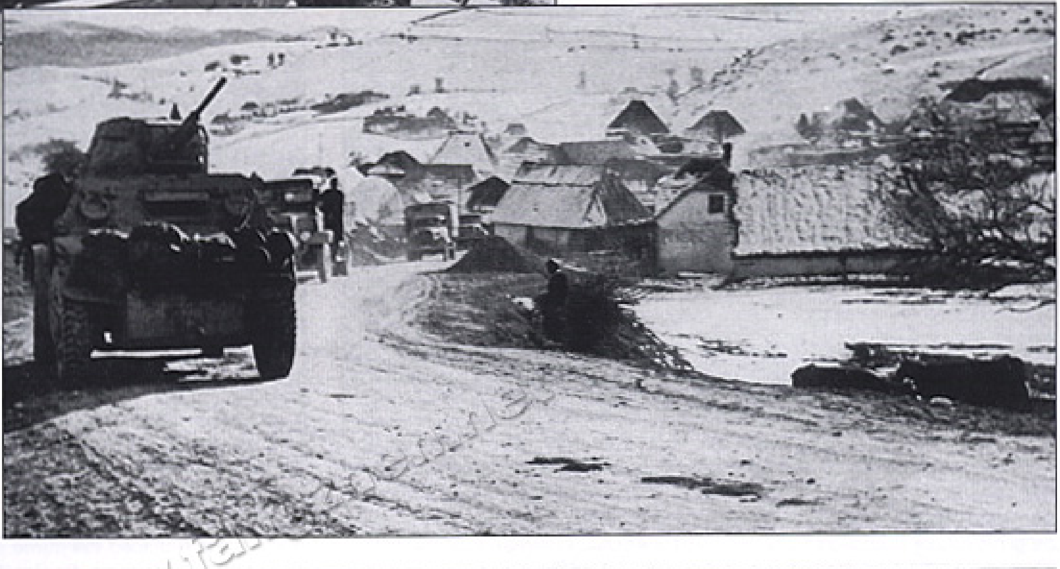
This photo shows the repair of track links from a Sd.Kfz. 250 or Sd.Kfz. 251. The families of these vehicles, which were built on half-track artillery tractors, were the only ones in the Panzerwaffe that featured caterpillars with rubber elements.



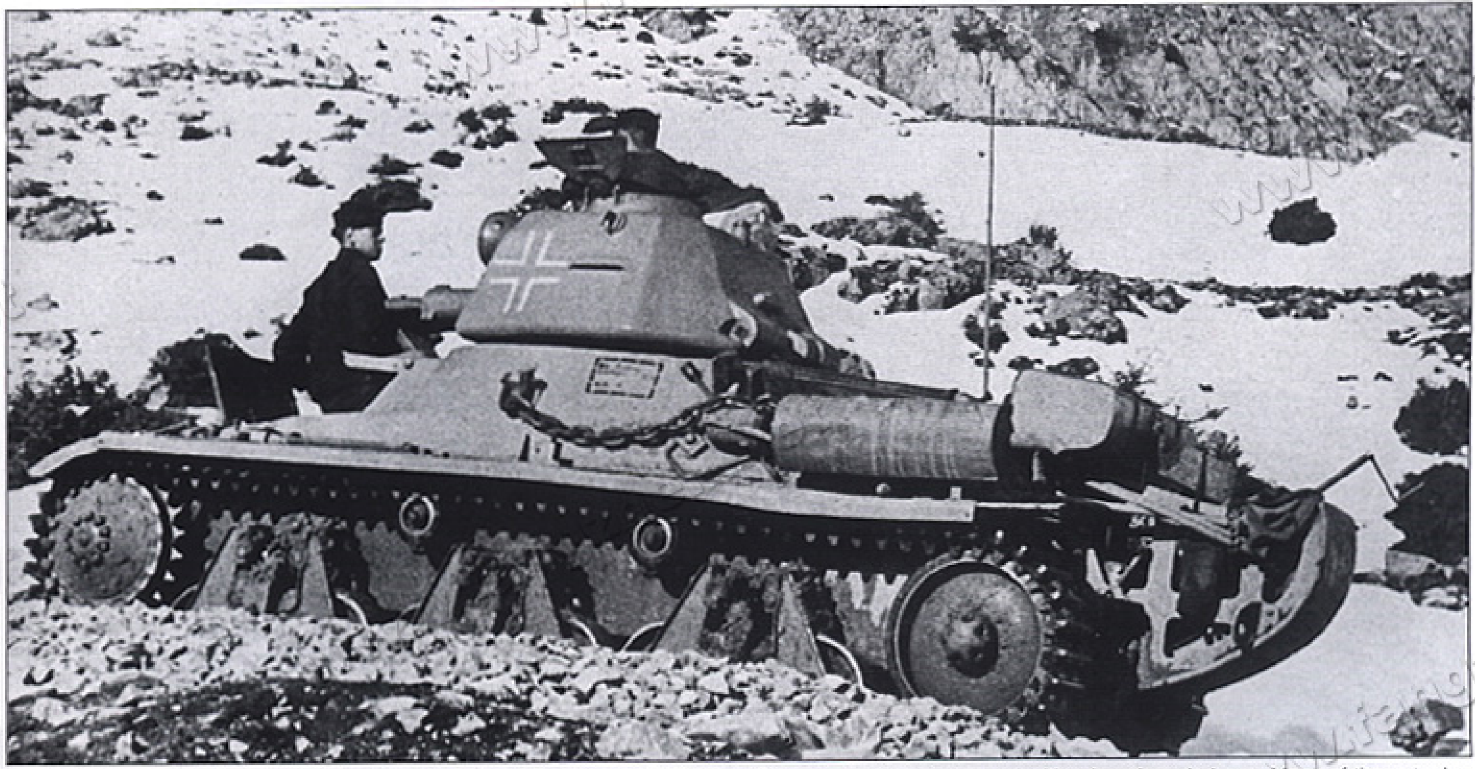
Another shot of an armored recce unit on Rhodos, this time showing a Sd.Kfz. 233. This is an early model of this vehicle and can be easily distinguished from the later version by the lack of the raised superstructure around the combat compartment. The vehicle was designed in autumn 1942 to be a heavy support vehicle for reconnaissance troops.



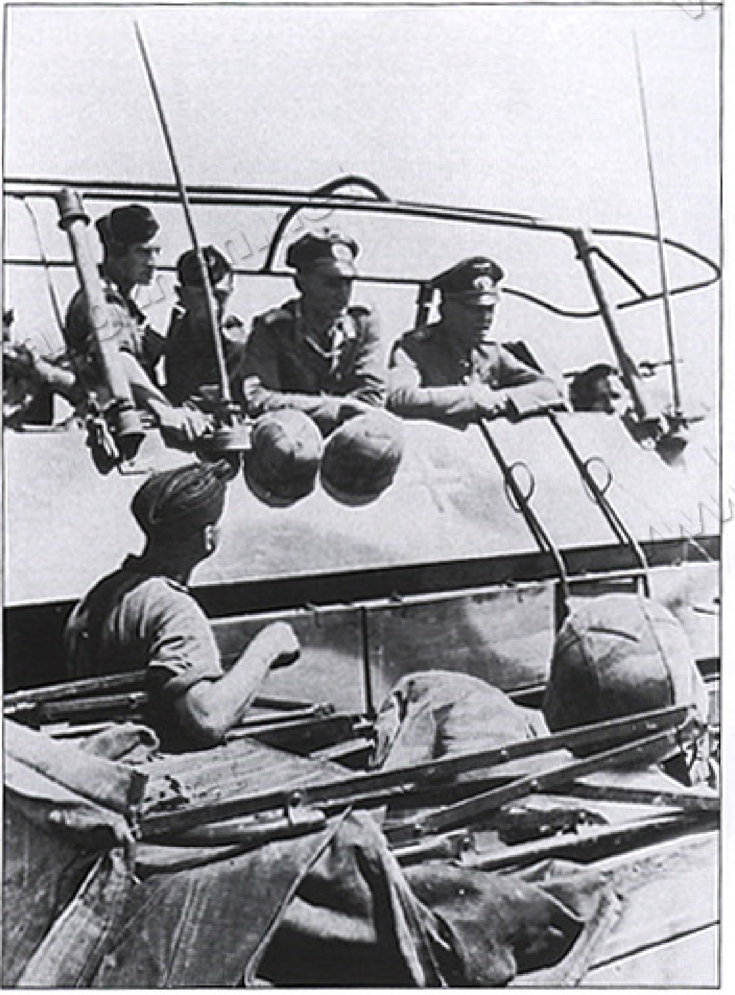
In the Balkans many minor armored units were engaged in combat against partisan forces, which were usually armed with second-class armored fighting vehicles. Here we see an Italian armored car that the Germans called the Panzerspähwagen AB41 201(i). All armored fighting vehicles abandoned by the Italian Army in the autumn of 1943 were repainted in German colors and also received German markings while serving in the front-line units. In this photo we can see parts of a license plate and the three-digit tactical number on the turret. It could be either "752" or "753".



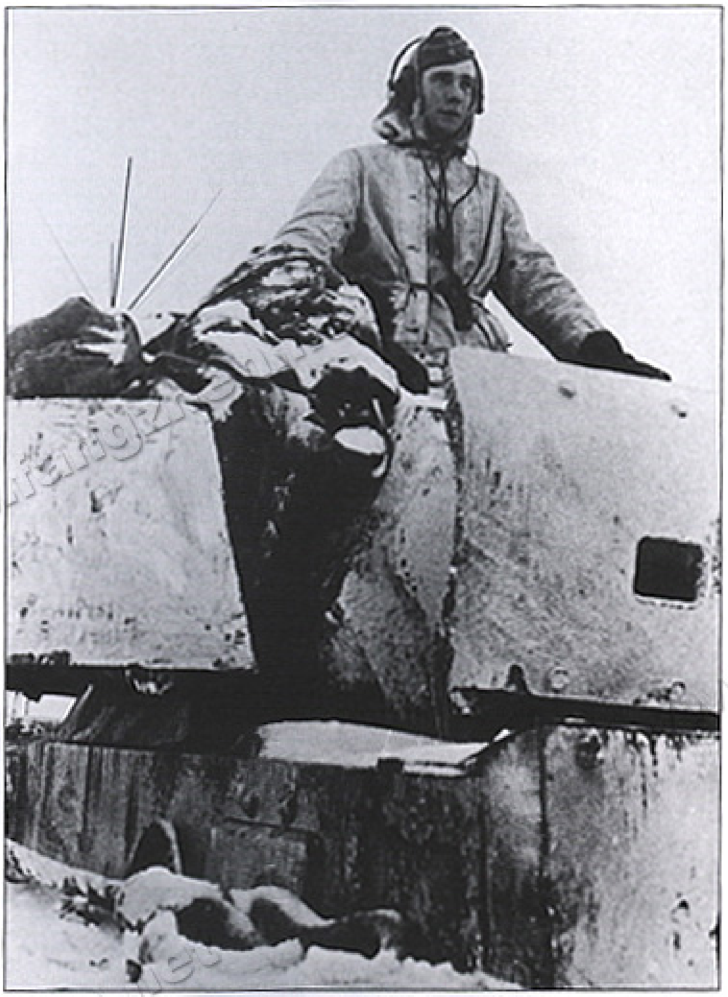
This Panzerspähwagen AB41 201(i) both leads and guards a convoy of supply trucks somewhere in the hilly vastness of Yugoslavia. Many such vehicles were used by second-line or police units for minor actions up through the end of the war.



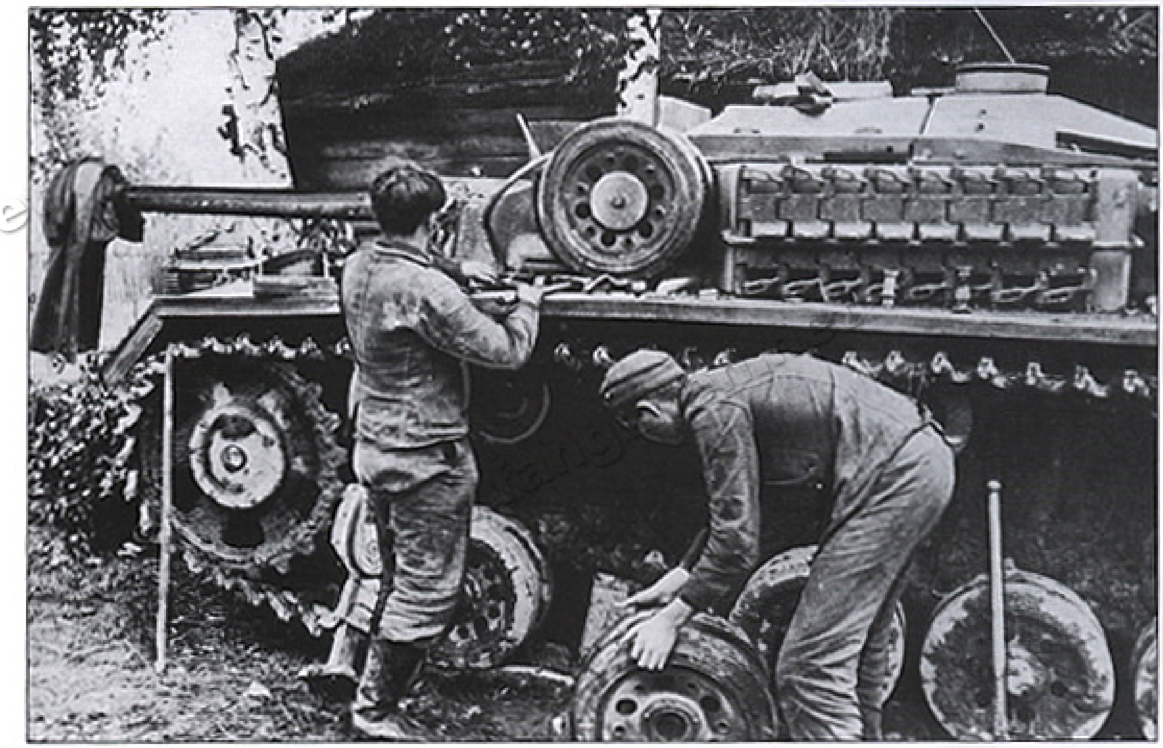
This former French Hotchkiss tank, re-designated Pz.Kpfw. 38H 735(f) in German service, was armed with a long-barreled gun. Many of these tanks, including 10 independent platoons, were sent to the Balkans from 1941 to 1943 to fight against partisans. The Germans used hundreds of such captured tanks in 1940, and all of them were covered with a German paint scheme and markings, as is visible in this photo.



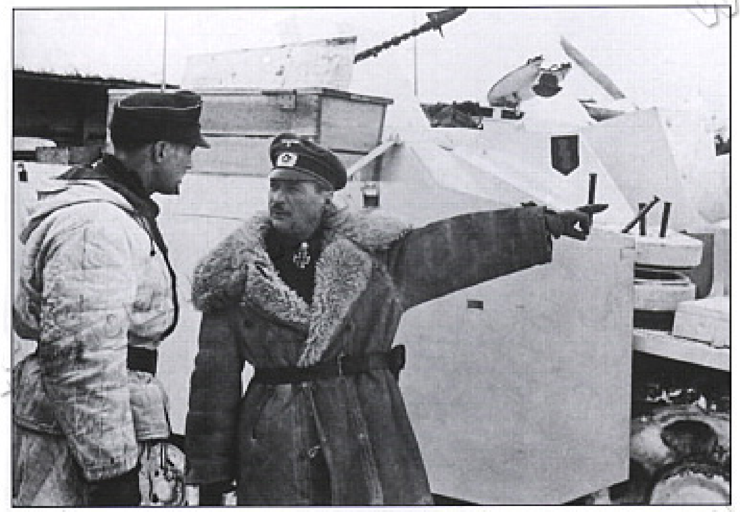
Generalleutnant Nikolaus von Vormann, who was awarded the Ritterkreuz in October 1943 for being an outstanding commander, took over the command of XLVII Pz.Kp. in late 1943 and led it during defensive operations on the left bank of the Dniepr river for the next few months. Here he gives orders from within a Sd.Kfz. 251/6 Ausf. C command vehicle that is painted in two-color camouflage. A full array of antennae is visible in this photo, which represents the following radio equipment: FuG 11 with a frame antenna, FuG 5 with a 1.4 meter rod antenna on the left, and FuG Spr Ger with the same type of antenna on the right.



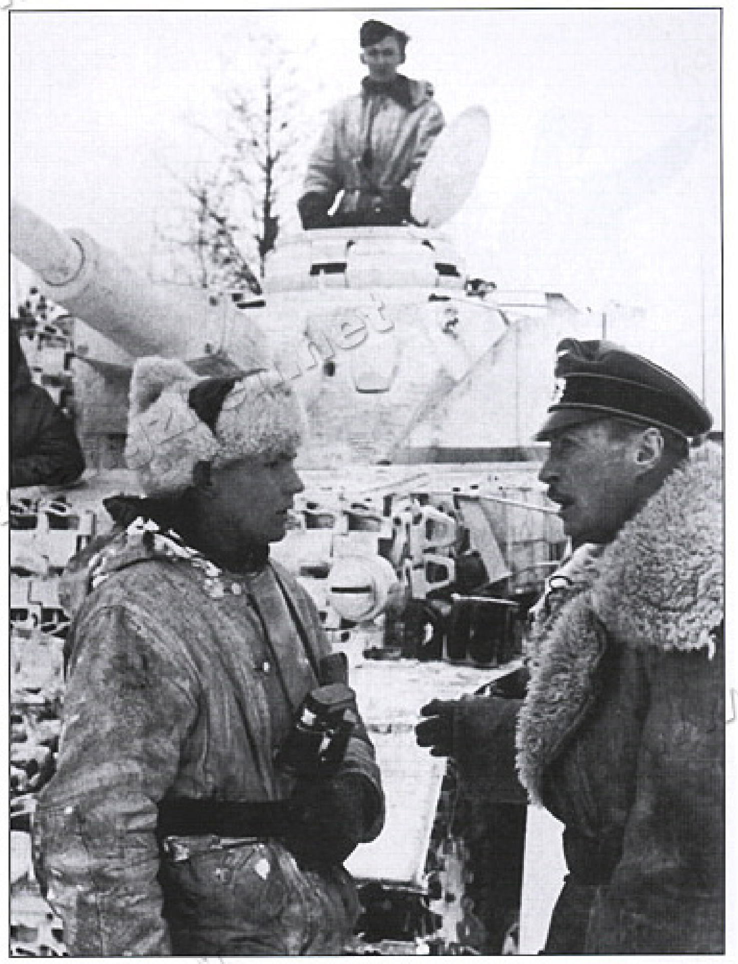
A warmly dressed tank commander keeps alert in the cupola of a Pz.Bef.Wg. III Ausf. K. This photo shows to advantage the details of how camouflage paint was applied. Visible behind the turret is the winch antenna mast of a FuG 8 radio set. This type of antenna, which was introduced in 1942, soon replaced the frame antenna. The FuG 8 was used to command tank troops, but some Pz.Bef.Wg. IIIs were equipped with the FuG 7 for communication with the Luftwaffe.



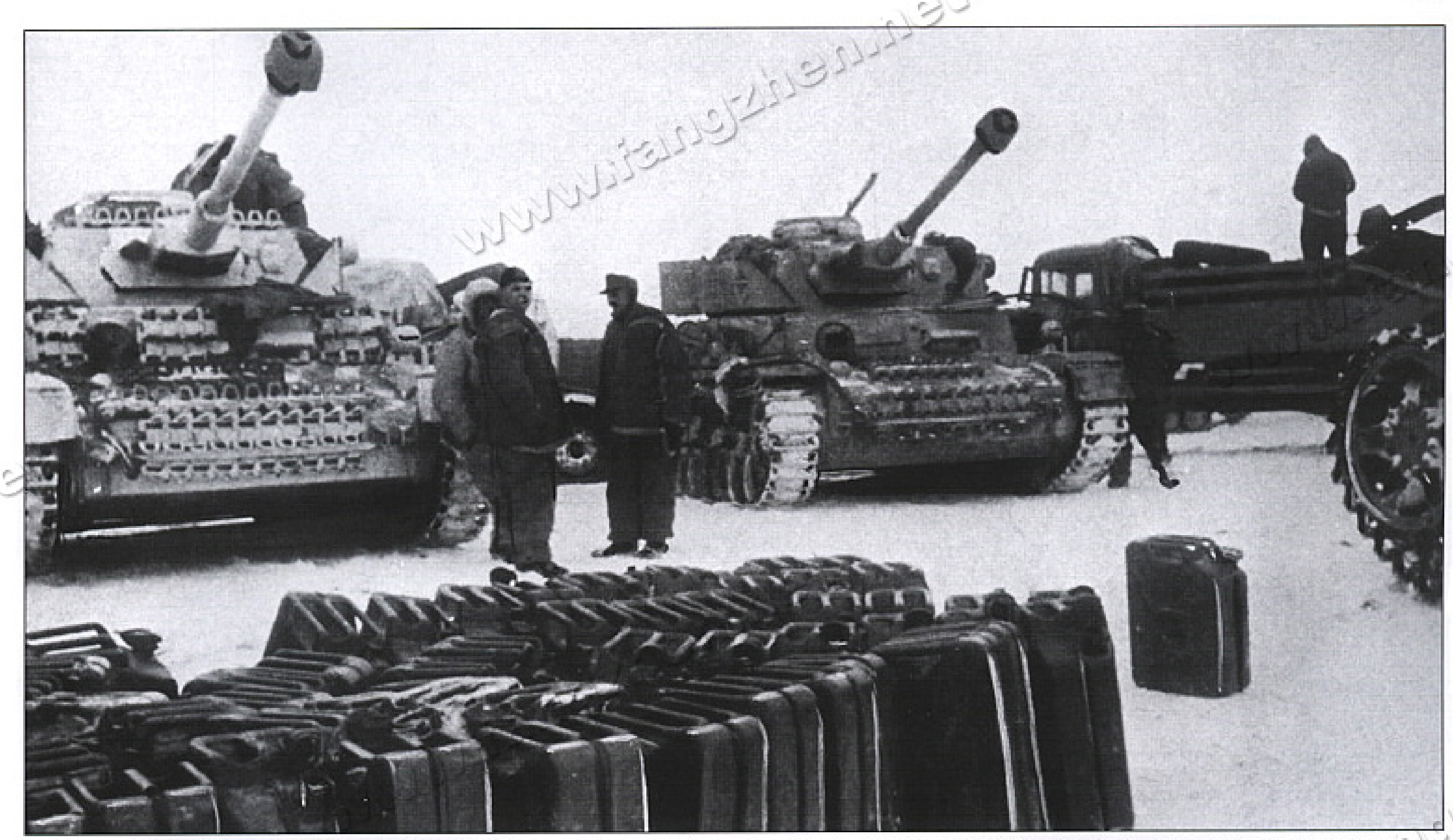
A StuG III Ausf. F/8 undergoes chassis repairs somewhere in central Russia. In 1943 this vehicle was still one of the most successful, most popular and most widely produced of all other Panzerwaffe armor fighting vehicles, except the Pz.Kpfw. IV. It was used not only by StuG.Abt., but also in Pz.Jäg.Abt. and even in Pz.Abt. of Panzer divisions.



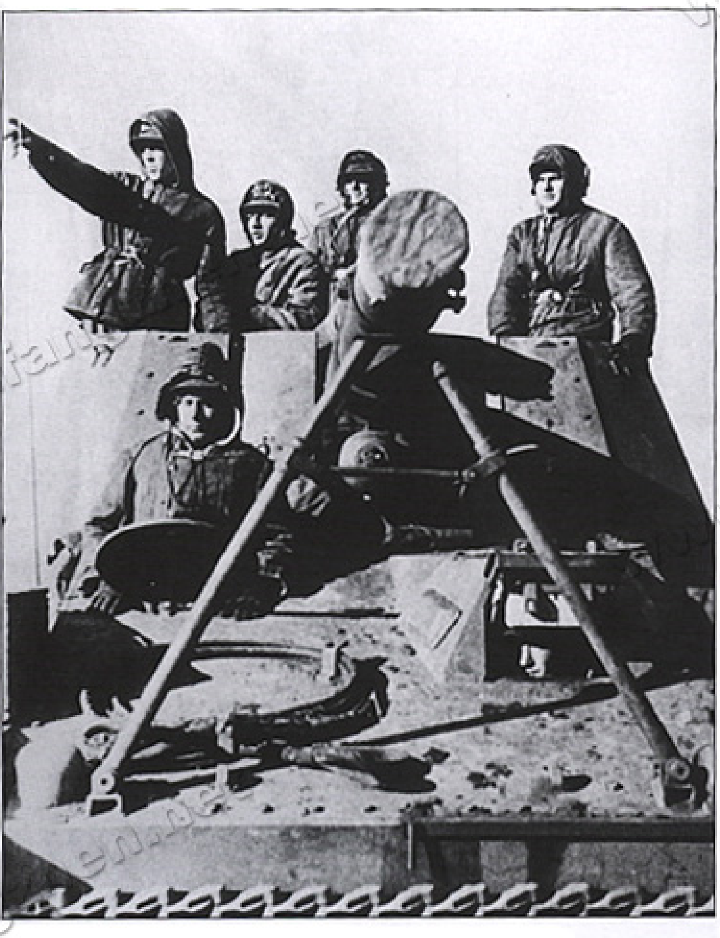
Generalmajor Graf Strachwitz is seen inspecting a StuG unit at the Narva front. The StuG III Ausf. G seen in the background carries a heavy coat of white camouflage painted with care by spray gun. Note the wooden box installed next to the machine gun shield, very untypical for the StuGs. Of special interest is the unit emblem painted next to the gun mantlet.

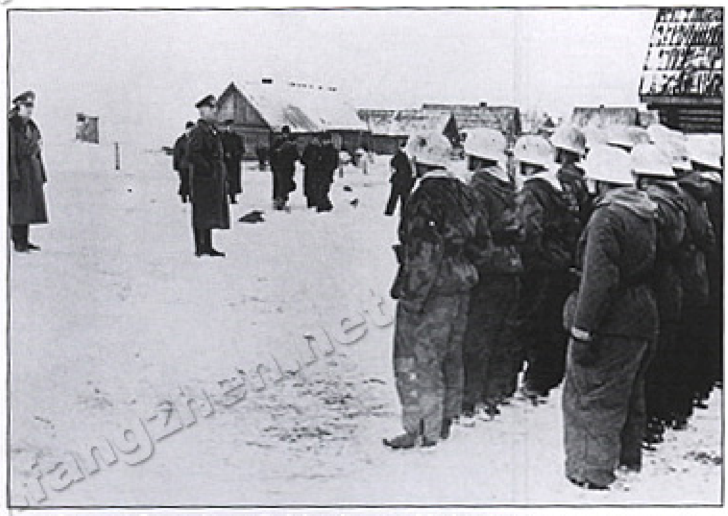


Generalmajor Graf Strachwitz, commander of Pz.Rgt. "Großdeutschland", was photographed at the Narva front in early April 1944 while conferring with the commander of the Pz.Kpfw. IV seen in the background. It is interesting to note that the uniform of this tank commander was originally white, but after three or four months of service it has become completely soiled. Note how completely this tank has been covered with white paint, which was a rather rare occurrence.



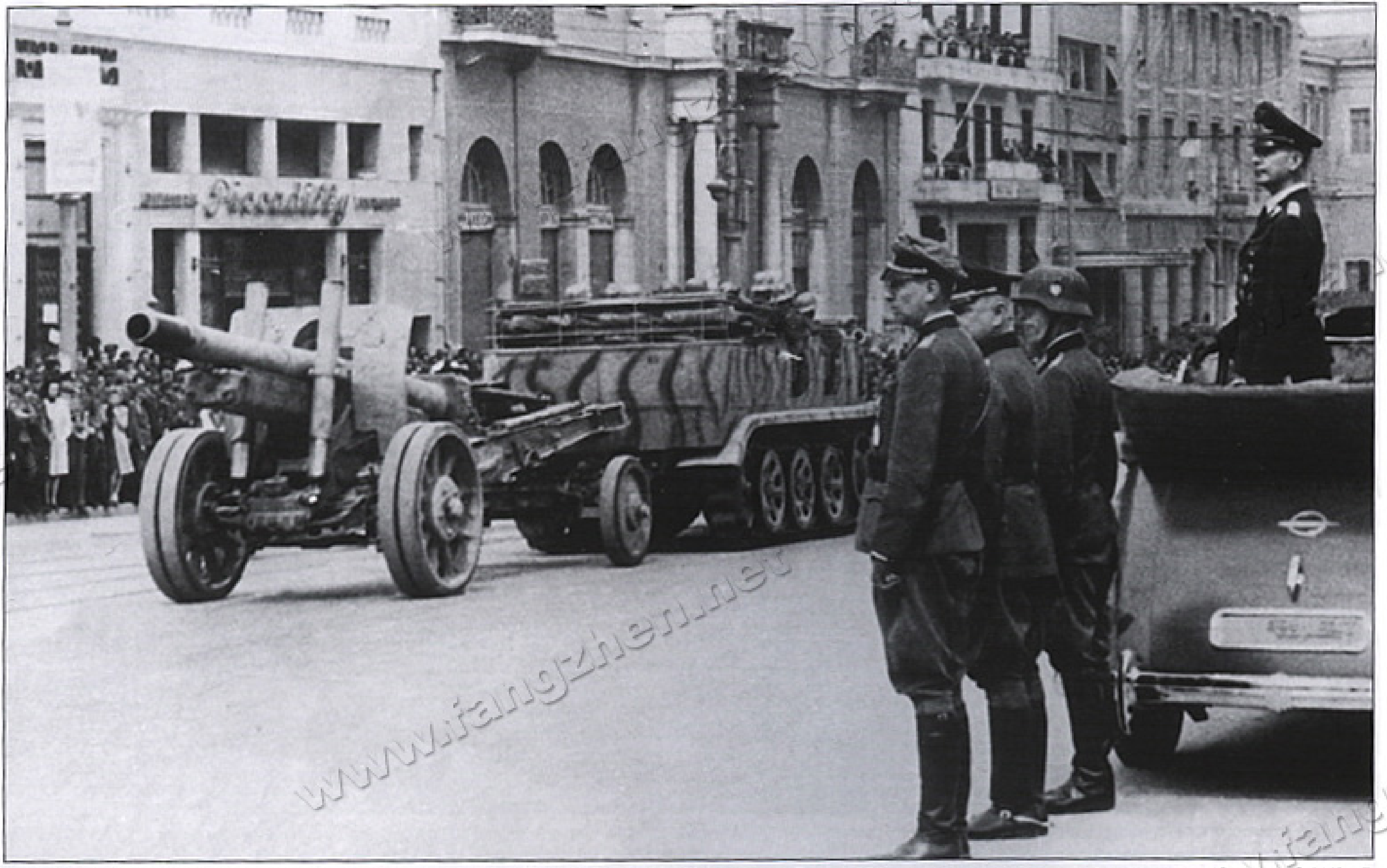
The main combat in early 1944 was the retreating operation in Ukraine, where the Soviets fought for better positioning for a summer offensive. During this fighting the Germans usually employed armored groups composed of various armored fighting vehicles. Only these vehicles could move across difficult snow-covered terrain, and fuel supplies were available only for them. German formations had many problems with fuel supplies during this winter, so the units were usually refueled somewhere in the field from hundreds of jerry cans transported by dozens of trucks, as this photo illustrates. Some transport vehicles ran out of fuel or were lost due to mud or enemy action, therefore non-combat vehicles were abandoned as useless during a retreat. Note the camouflage on the pair of Pz.Kpfw. IVs. Both have been covered in white, but the coat of paint on the tank on the right was applied much earlier.



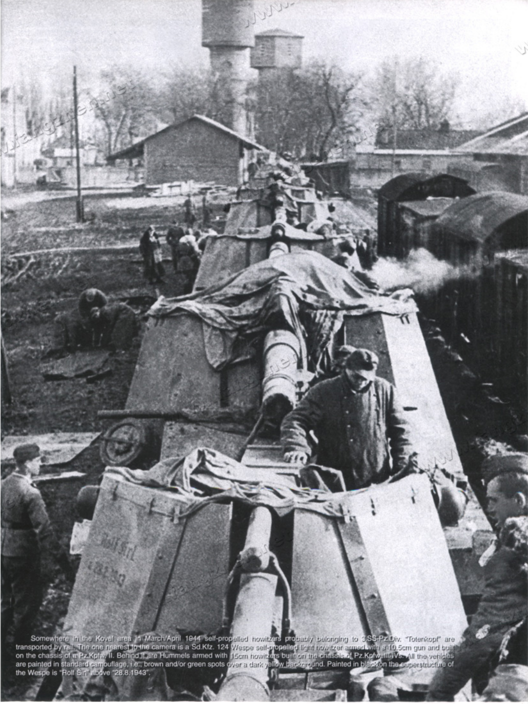


General Georg Hans Reinhardt was able to give a short rest between battles to Obergefreiter Robert Albust when he decorated him with the Ritterkreuz. Albust commanded a company of Panzerjäger self-propelled guns from a Pz.Jäg.Abt., which destroyed 24 tanks in a short period of time during the fight for Vitebsk in February 1944. Note that the soldiers from Albust's company wear reversible camouflage uniforms. The soldier nearest to the camera in the second row has a new type of reversible winter uniform that is similar to the Soviet "kufayka" winter uniforms, but in gray.

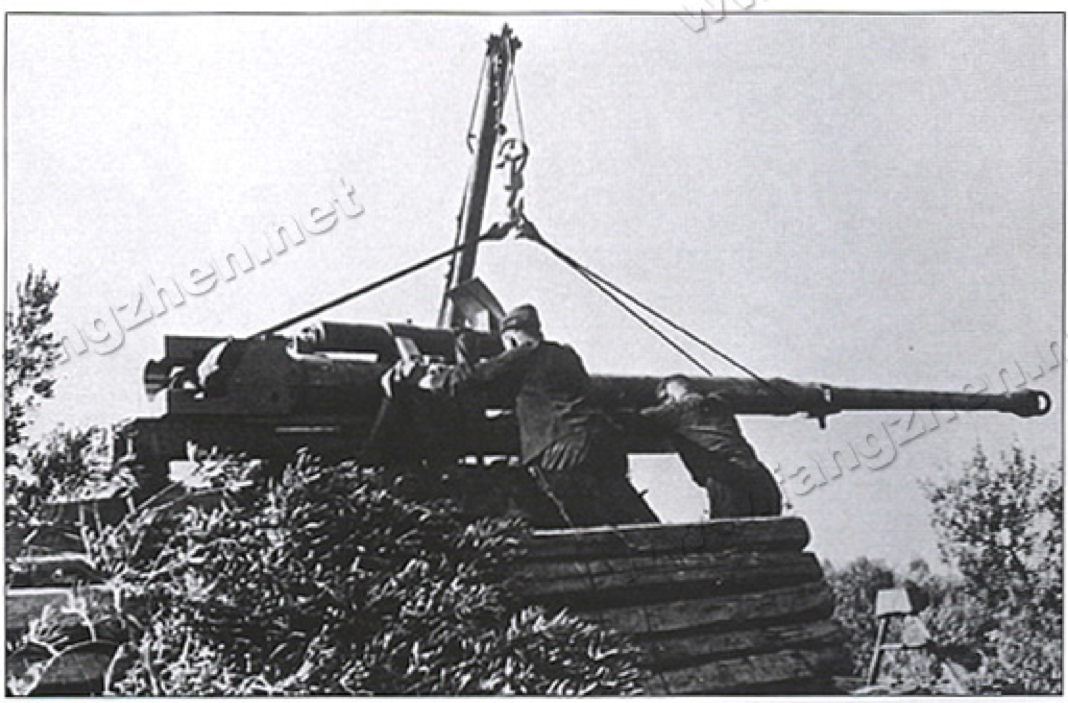
A front view of a Sd.Kfz. 165 Hummel self-propelled heavy howitzer and its crew. This is a late series vehicle with modified armor construction between the combat compartment and the front plate of the hull. As the photograph shows, the crew of a Hummel consisted of six crew members: driver, radio operator and four gunners, including the crew commander, seen here at the extreme right.



General Speidel observes a parade of a motorized artillery unit armed with captured Soviet 152mm heavy howitzers being towed by German Sd.Kfz. 7 prime movers. With the Germans in retreat in early 1944, this kind of parade helped to boost the morale of both the troops and the civilians. The Soviet gun is completely repainted in the standard dark yellow (RAL 7028) color, while the half-track wears an interesting camouflage pattern composed of narrow, wavy lines of green (RAL 8002) and brown (RAL 8017).

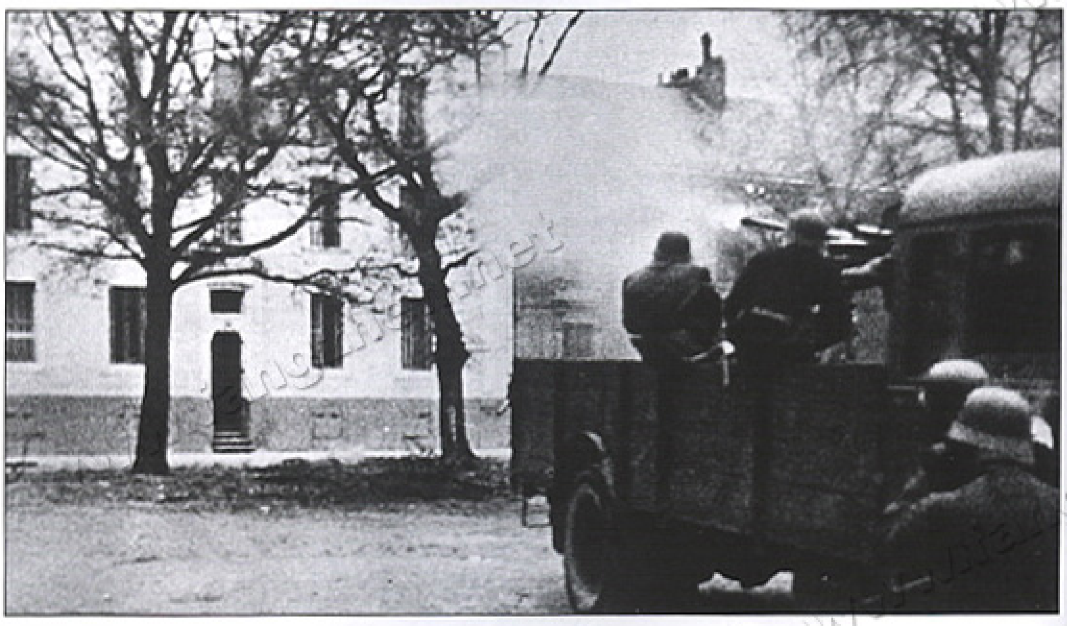


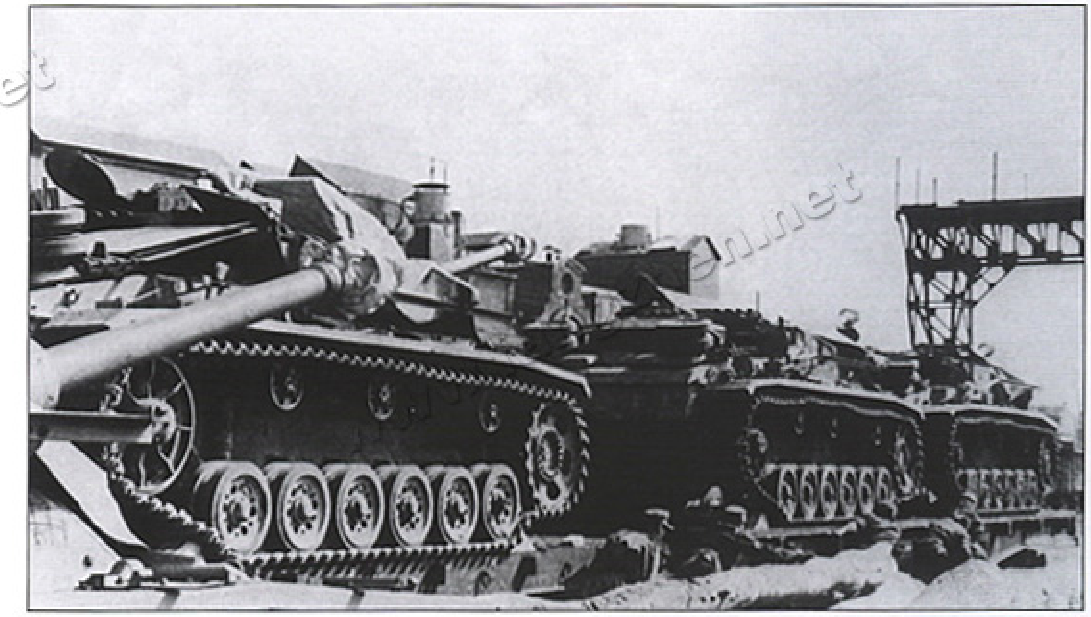
Somewhere in the Kovel area in March/April 1944 self-propelled howitzers probably belonging to 3.SS-Pz.Div. "Totenkopf" are transported by rail. The one nearest to the camera is a Sd.Kfz. 124 Wespe self-propelled light howitzer armed with a 10.5cm gun and built on the chassis of a Pz.Kpfw. II. Behind it are Hummels armed with 15cm howitzers built on the chassis of Pz.Kpfw. III/IVs. All the vehicles are painted in standard camouflage, i.e., brown and/or green spots over a dark yellow background. Painted in black on the superstructure of the Wespe is "Rolf Sirl" above "28.8.1943".



This scene shows the process used to replace the 8.8cm PAK 43 anti-tank gun on a Sd.Kfz. 164 Nashorn, which was the most deadly anti-tank weapon on the Eastern Front in 1944. The PAK 43 was well constructed and was able to survive almost 1,000 rounds, any one of which would penetrate the armor of any Soviet tank employed on the front. The vehicle seen in this photo has additional "armor" composed of logs fastened to the side of the Nashorn's superstructure.

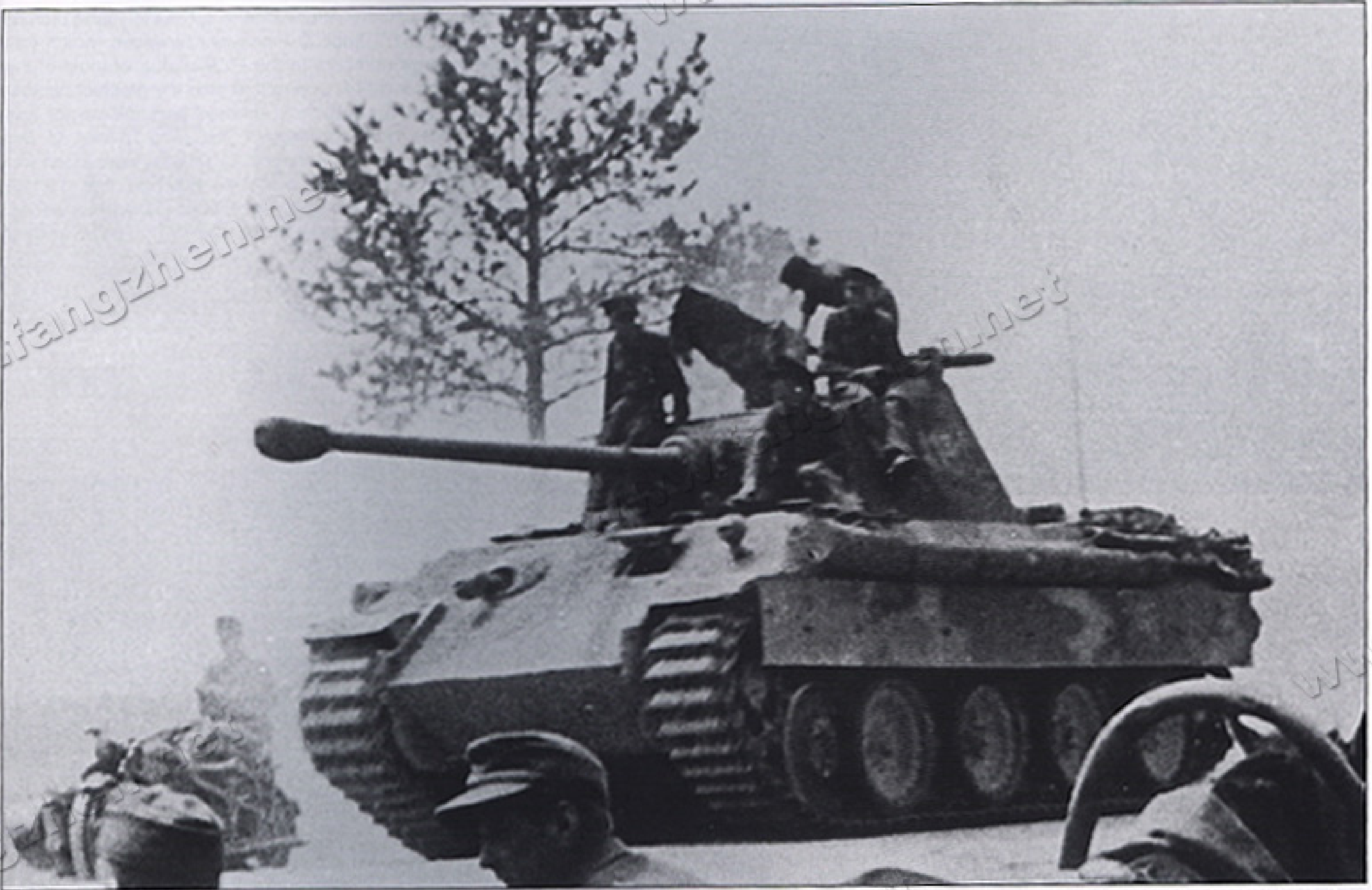
One of the more unusual combat vehicles in the Wehrmacht arsenal was this Renault heavy 4x4 truck armed with a 2cm Flak 30 gun taken from a Sd.Kfz. 222 or a Pz.Kpfw. II. The weapon, which was installed on a special mount, could fire in all directions. This vehicle was seen in action as late as 1944. The same type of Flak truck was used in action on 27 March 1942 to fight against a British commando attack on the St. Nazaire harbor.



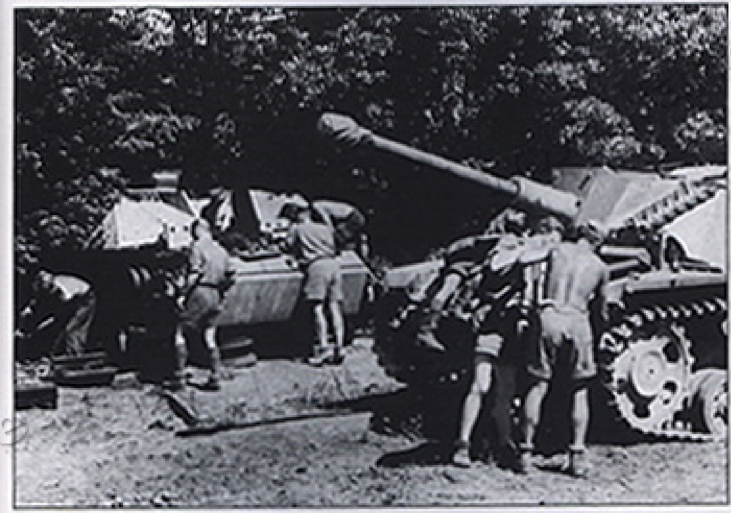


Fresh supplies of StuGs wend their way to the front line. Since an engine was not available, soldiers had to propel the flat car themselves. The StuGs seen here are late series vehicles with steel return rollers, "Zimmerit" paste and the "Saukopf" mantlet. Note that the armored side skirts have been removed and are stored on the engine decks. Throughout 1944 German factories produced 5,749 StuGs in different versions. This was only slightly less than the 6,850 pieces of the two main types of medium tanks, the Pz.Kpfw. IV and the Pz.Kpfw. V.

www.jiangzhen.net



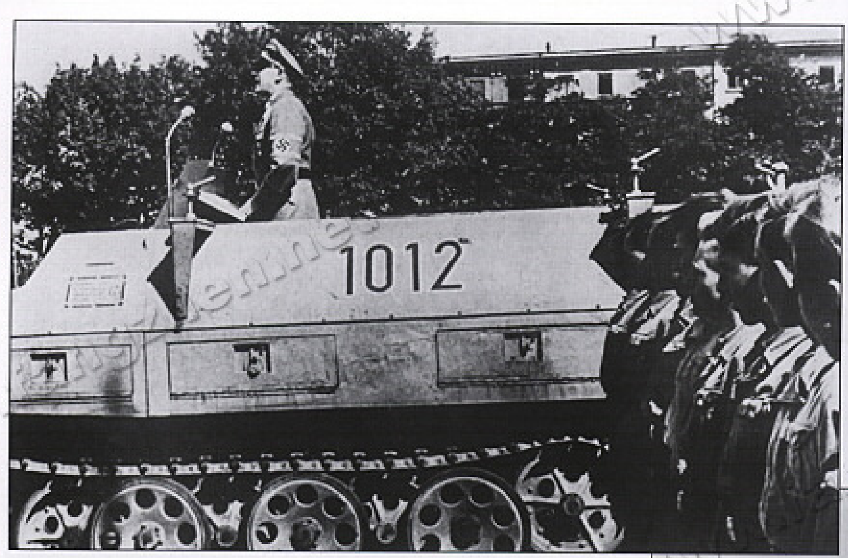
A three-color camouflaged Pz.Kpfw. V "Panther" Ausf. G travels to its unit's assembly area somewhere in the Poland-Belorussia-Ukraine border region. Production of this Panther model began in March 1944 and continued to the end of the war.



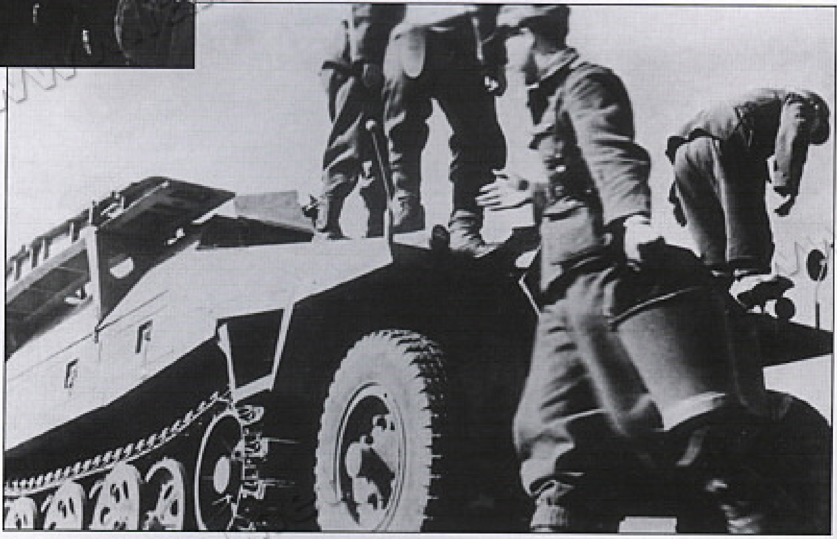
This photo shows a workshop concealed somewhere in the woods on the Western Front that was set up just prior to the Normandy invasion. The vehicle in the background undergoes a thorough repair. Both the sprocket and final drives, and the complete gun assembly, have been removed. The other vehicle apparently has problem with its brakes.

The crew of a Sd.Kfz. 251/3 Ausf. D clean up both the vehicle and their belongings early in the spring of 1944. The vehicle, which belonged to Pz.Rgt.6 from 3.Panzer-Division, was equipped with the FuG 8 antenna (not visible in this photo) affixed to the left rear on the side of the vehicle.

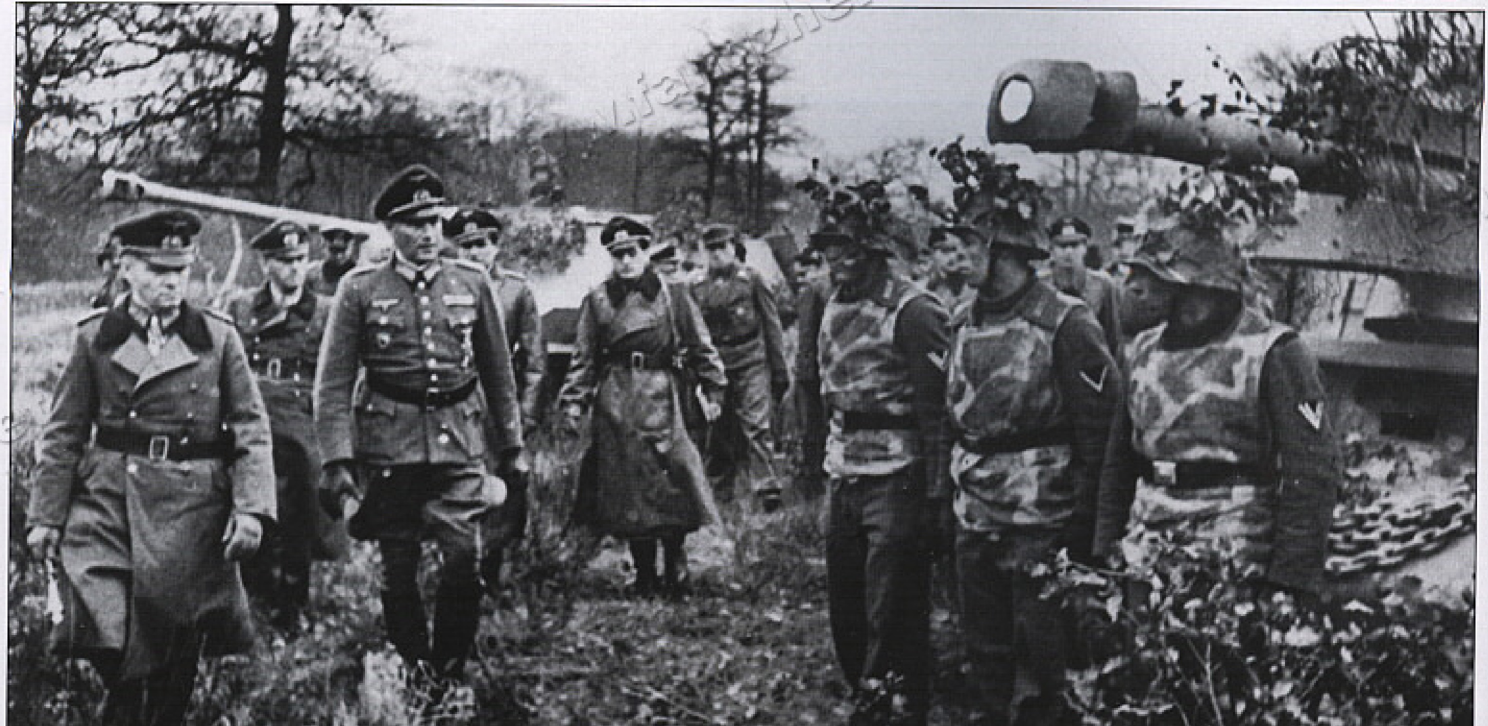
www.fangzhenw.net



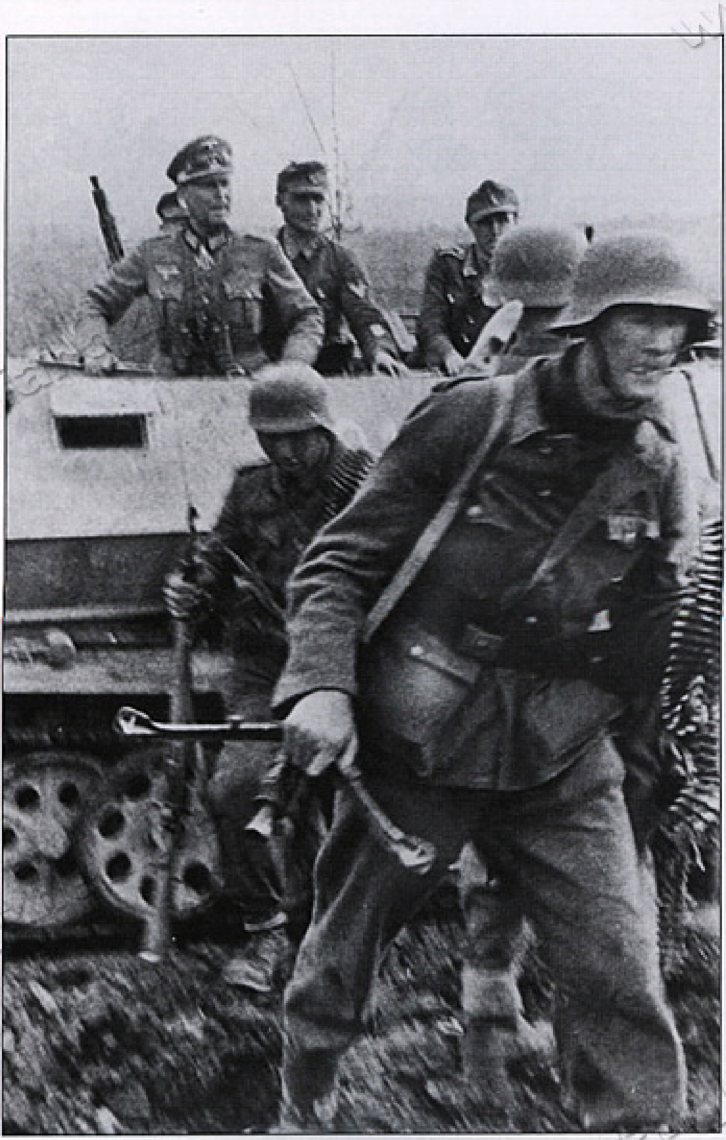
Reichsjugendführer Artur Axmann speaks to young recruits from a Sd.Kfz. 251/7 Ausf. D Pionierpanzerwagen, which was employed in large numbers in the Pz.Pion.Abt. of most of the Panzer divisions in 1944. During that year the greatest number of this main German half-track armored personal carrier was produced since the beginning of the war. Thanks to this production, the Panzer Grenadier regiments were very well equipped in almost every battle in 1944. However, due to a lack of logistic coordination in the Panzerwaffe during this period, these vehicles could not be used to their full potential in most operations.

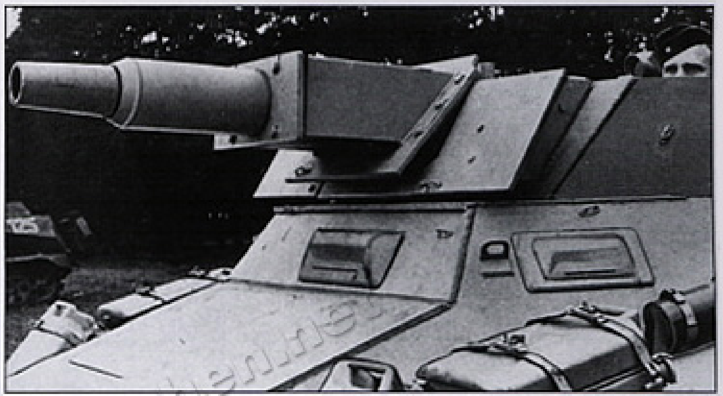


A Sd.Kfz. 251/7 Pionierpanzerwagen fitted with assault bridges is being prepared for railway transport to a front-line area in Western Europe. Note the details of the undersides of the small assault bridges. Hanomags played a rather minor role in France in the summer of 1944 due to the defensive nature of the battles in which the Panzerwaffe was employed. They helped to transport and maneuver infantry, but were quickly eliminated from the battlefield by the power of the Allied air forces.



Feldmarshall Erwin Rommel inspects an armored troop equipped with a self-propelled howitzer built on the chassis of a captured French tank. The unit he is visiting could be Pz.Ersatz und Ausbildungs Abt. 100, but some of these vehicles were also incorporated into other divisions, such as 8.Pz.Art.Abt., for example, prior to 6 June 1944 and used in combat. The vehicle closest to the camera is one of forty-eight 10.5cm leFH 18(Sf) auf Geschützwagen 39H(f) vehicles. In the background is the same type of vehicle, but this one is armed with a 7.5cm PAK 40 anti-tank gun.

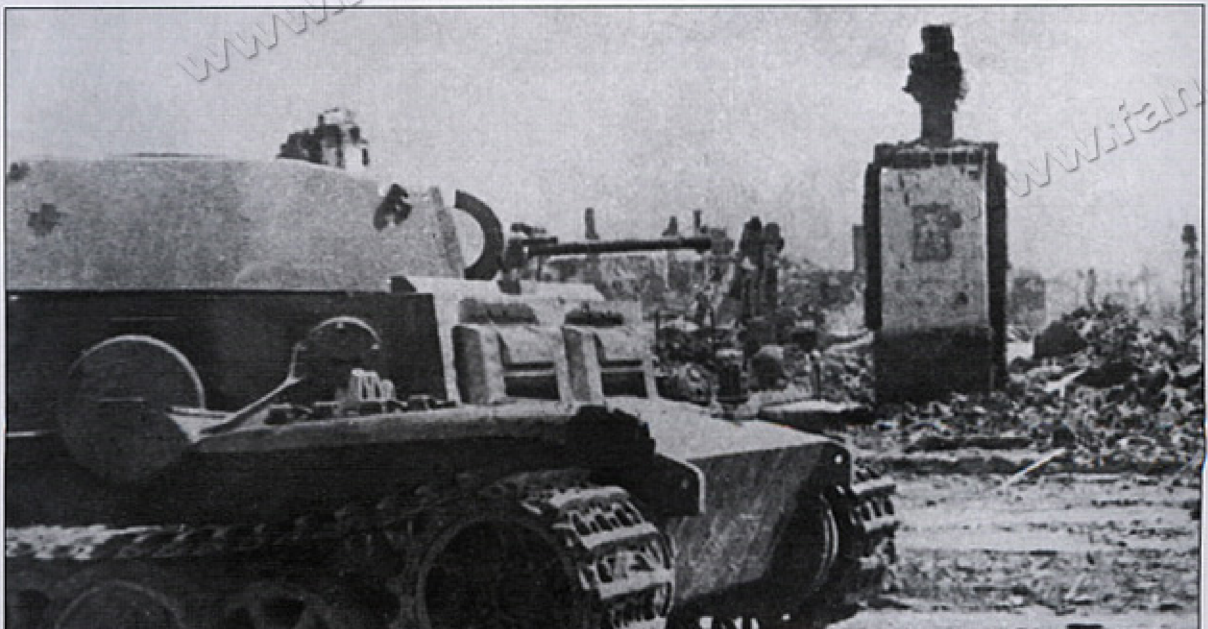


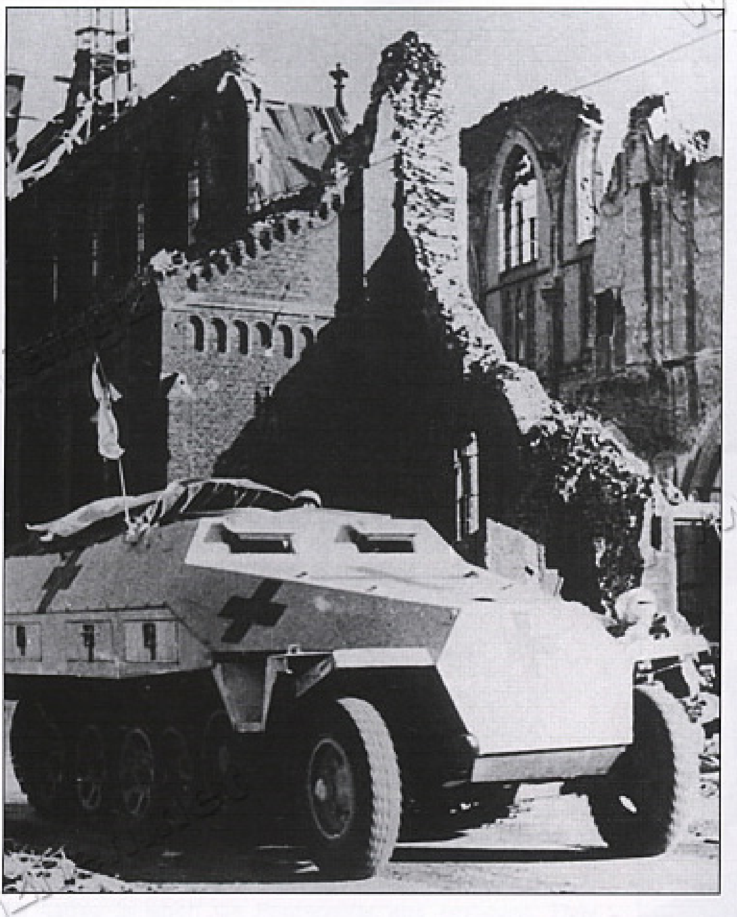


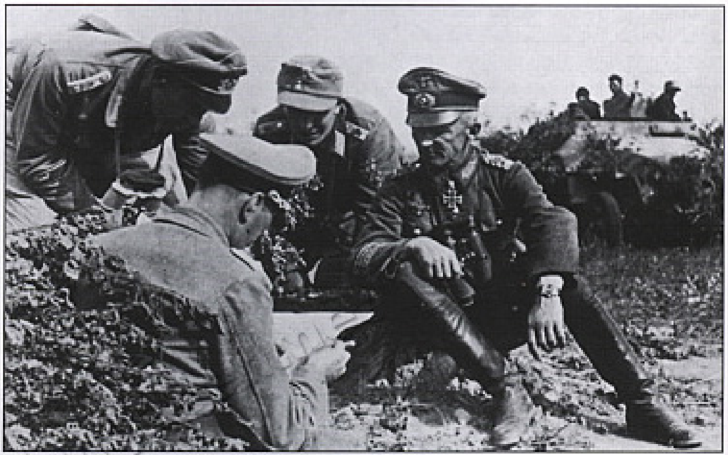
The Sd.Kz. 234/3 was issued to armored reconnaissance companies to provide anti-tank support for other armored cars. Produced in the latter half of 1944, these vehicles mounted a 7.5cm L/24 howitzer. Note the details of the gun mount. In the background may be seen the rear portion of a Sd.Kfz. 250/9, the reconnaissance version of the Sd.Kfz. 250, which was armed with a 2cm gun installed in a turret taken from a Sd.Kfz. 222.

The German divisions were composed into Kampfgruppen. One of these units was KGr. K, which was commanded by Oberst Karl Lorenz, the commander of Pz.Gren.Div. "Großdeutschland". He won the Ritterkreuz in February 1942 and was later awarded the Eichenlaub. In this photo we see him commanding from a Sd.Kfz. 251/6 Ausf. C during the battle near Targul Frumos, Romania in May of 1944. Karl Lorenz succeeded Generalleutnant von Manteuffel and took over the command of "Großdeutschland" on 1 September 1944.

One of only a few Pz.Kpfw. II Ausf. Js produced by the MAN factory in 1942 was abandoned by the Germans in the town of Luck in July 1944. The tank is camouflaged with two colors and has an unusual small black national cross on the side of the turret. There were only 22 pre-series pieces of this tank produced, and most of them were used in different divisions on the Eastern Front until the end of hostilities.

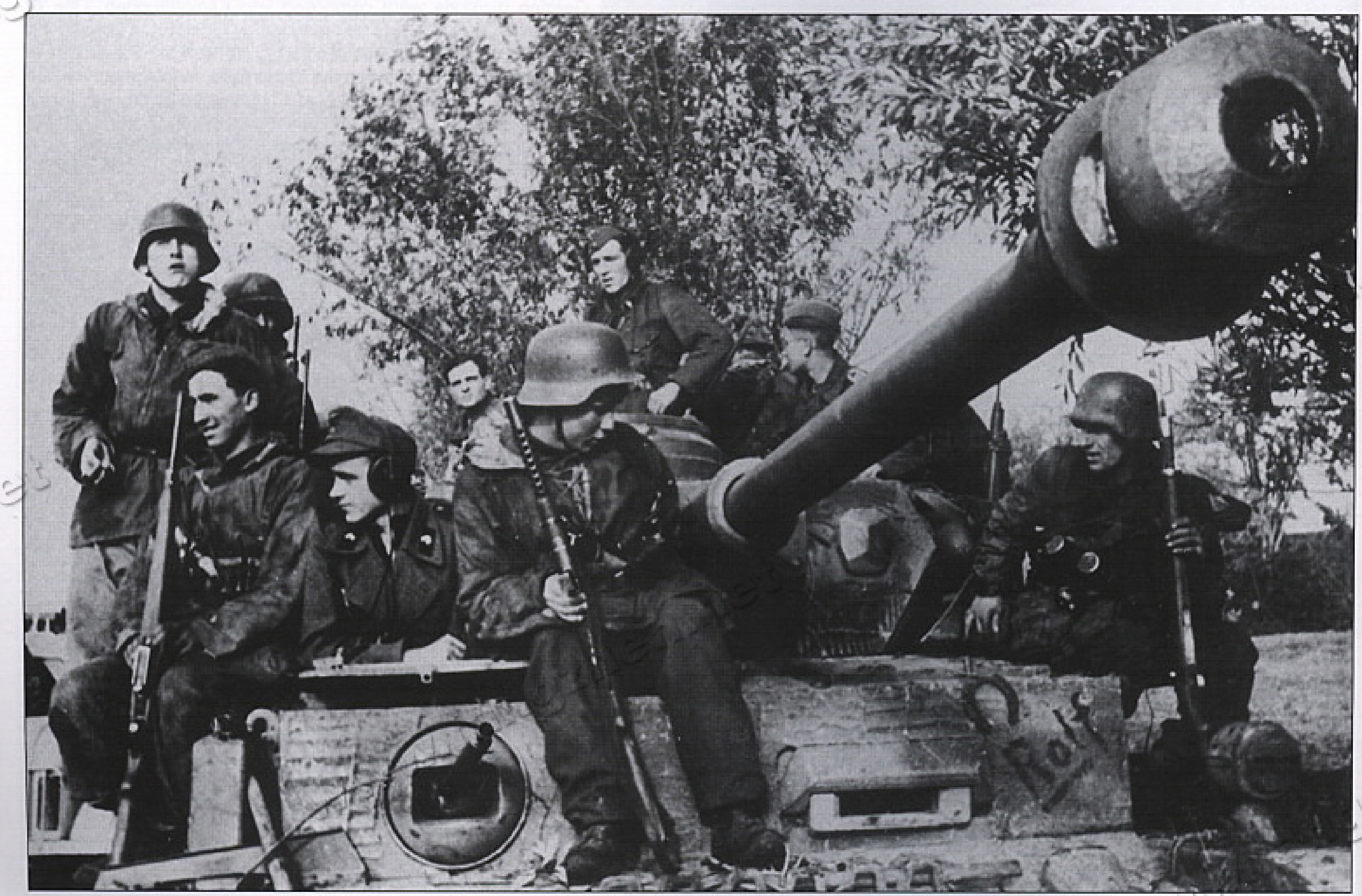




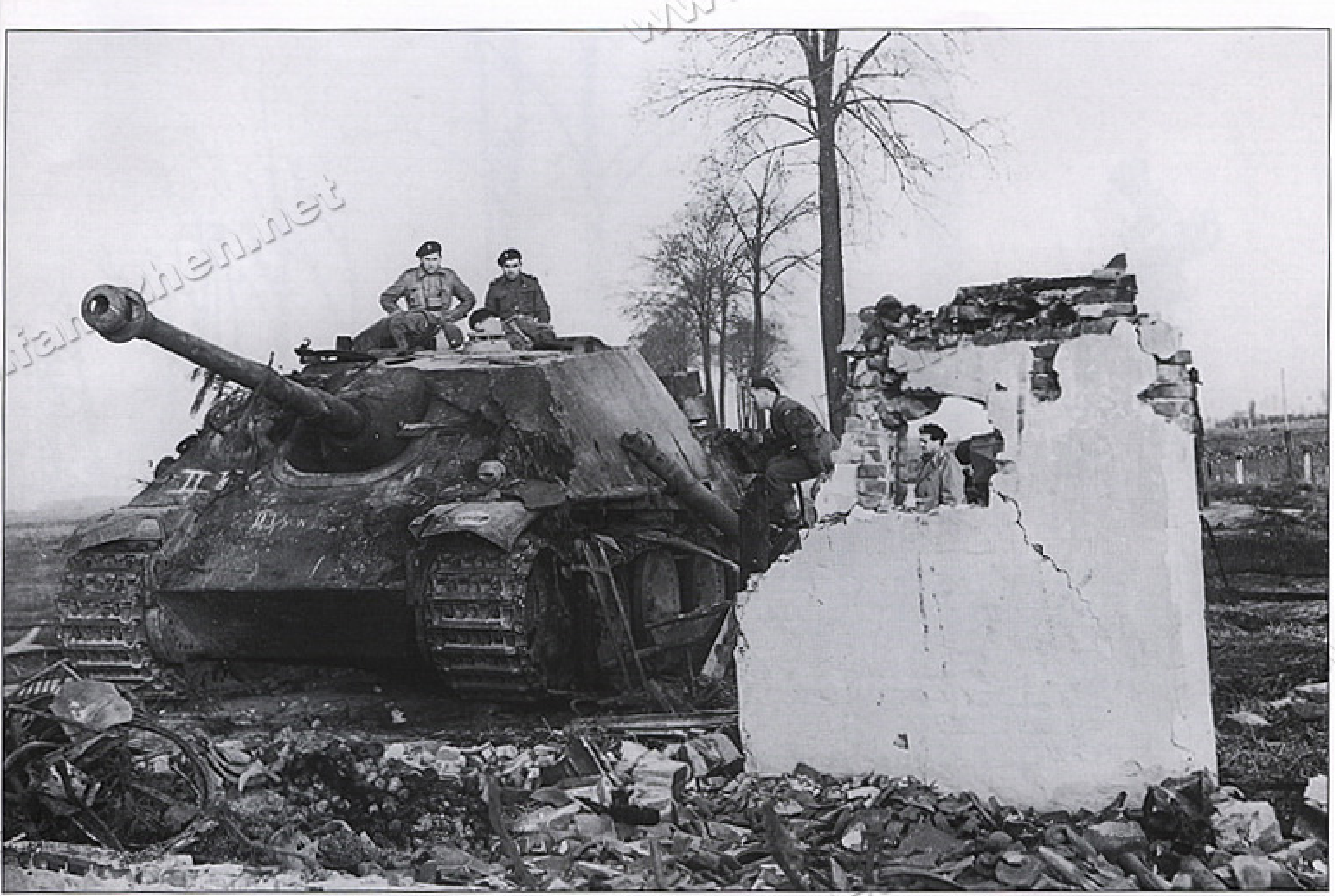


One of the commanders of Pz.Gren.Div. "Großdeutschland" in 1944 was the famous Generalleutnant Hasso von Manteuffel, who won the Schwerter (swords) to the Ritterkreuz for his successes on all fronts. This photo was taken in August 1944 shortly after the division passed from Heeresgruppe Süd to Heeresgruppe Mitte, just before it was sent to Western Europe. Note the cuff titles on Manteuffel's right sleeve: the larger, light colored one is the Afrika Korps band, a souvenir of his battles in Tunis, while the smaller, darker one is the "Großdeutschland" title.

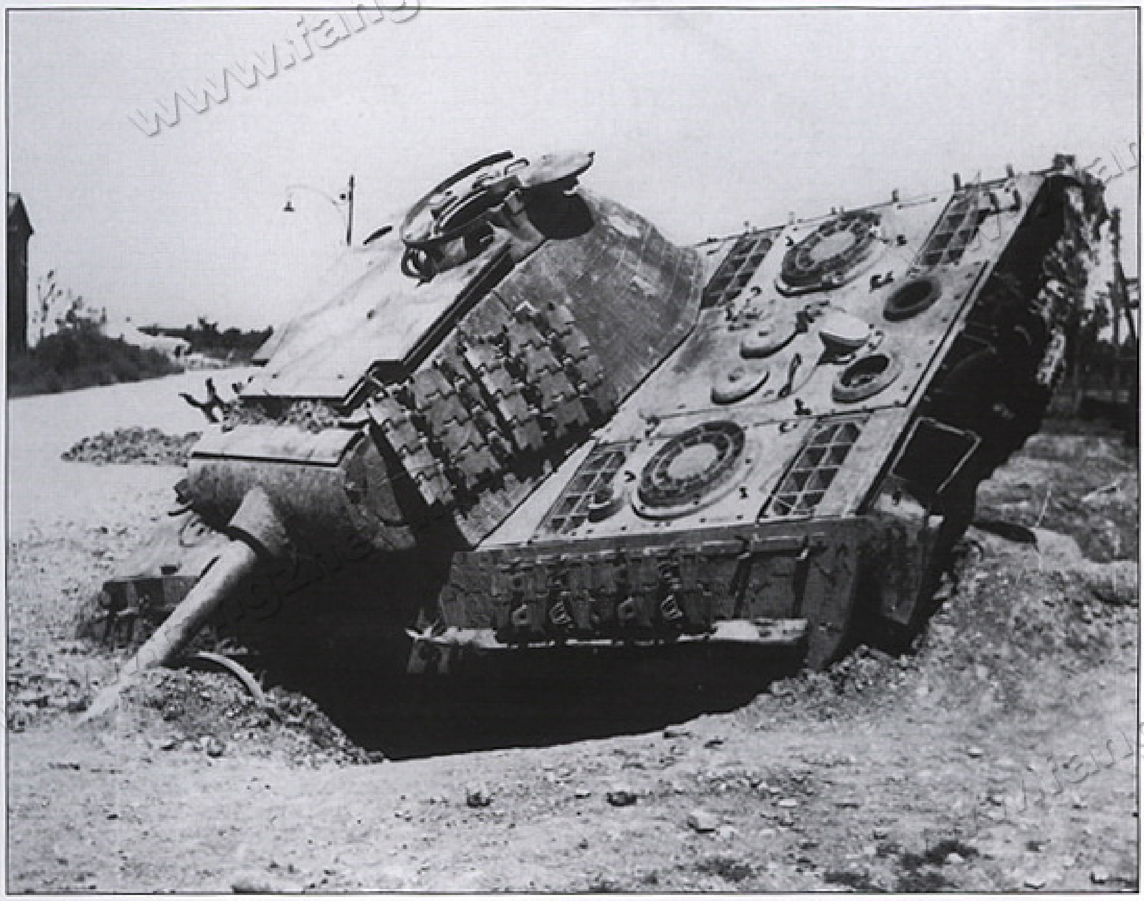
This Sd.Kfz. 251/8 Ausf. D armored medical vehicle, which is seen passing by a ruined cathedral in France in August 1944, wears quite an unusual overall paint scheme of white with large red crosses painted on each of side of the "Hanomag". Many of the medical vehicles in France were destroyed by the Allied air forces, which exterminated any mechanized column traveling on French roads. Such vehicles were usually marked with red crosses in white circles painted over standard dark yellow camouflage, but it seems that even the front wheels of this example are painted white.



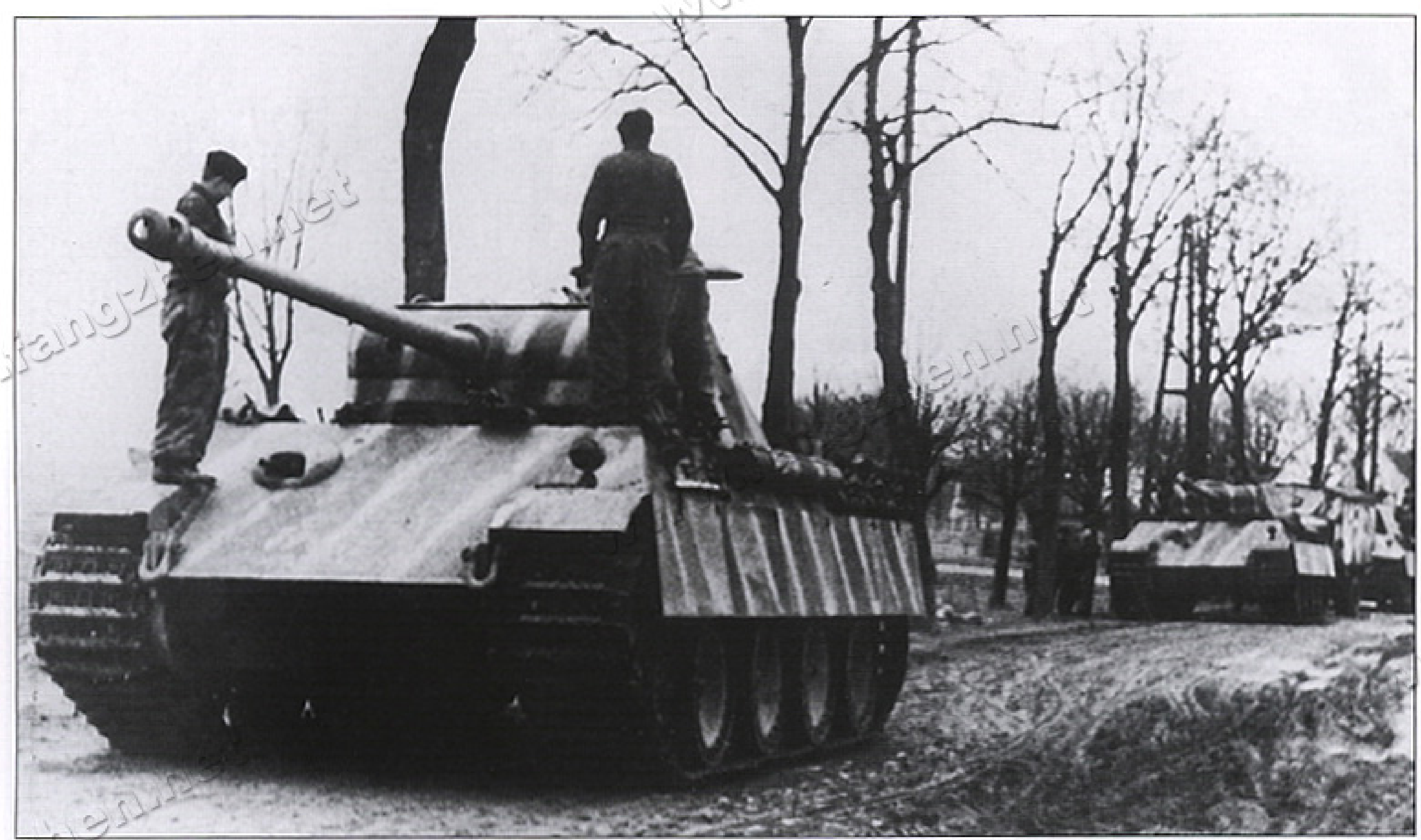
A Pz.Kpfw. IV, which has had its hull's side skirts shot off, carries an infantry squad into action. Among the units that fought in Normandy, the Pz.Kpfw. IVs were usually employed by about half the companies in the Panzer regiments. Despite being obsolete, they played an important role on the field of battle. The driver named this tank "Rolf" and attached a horseshoe over the name for luck.



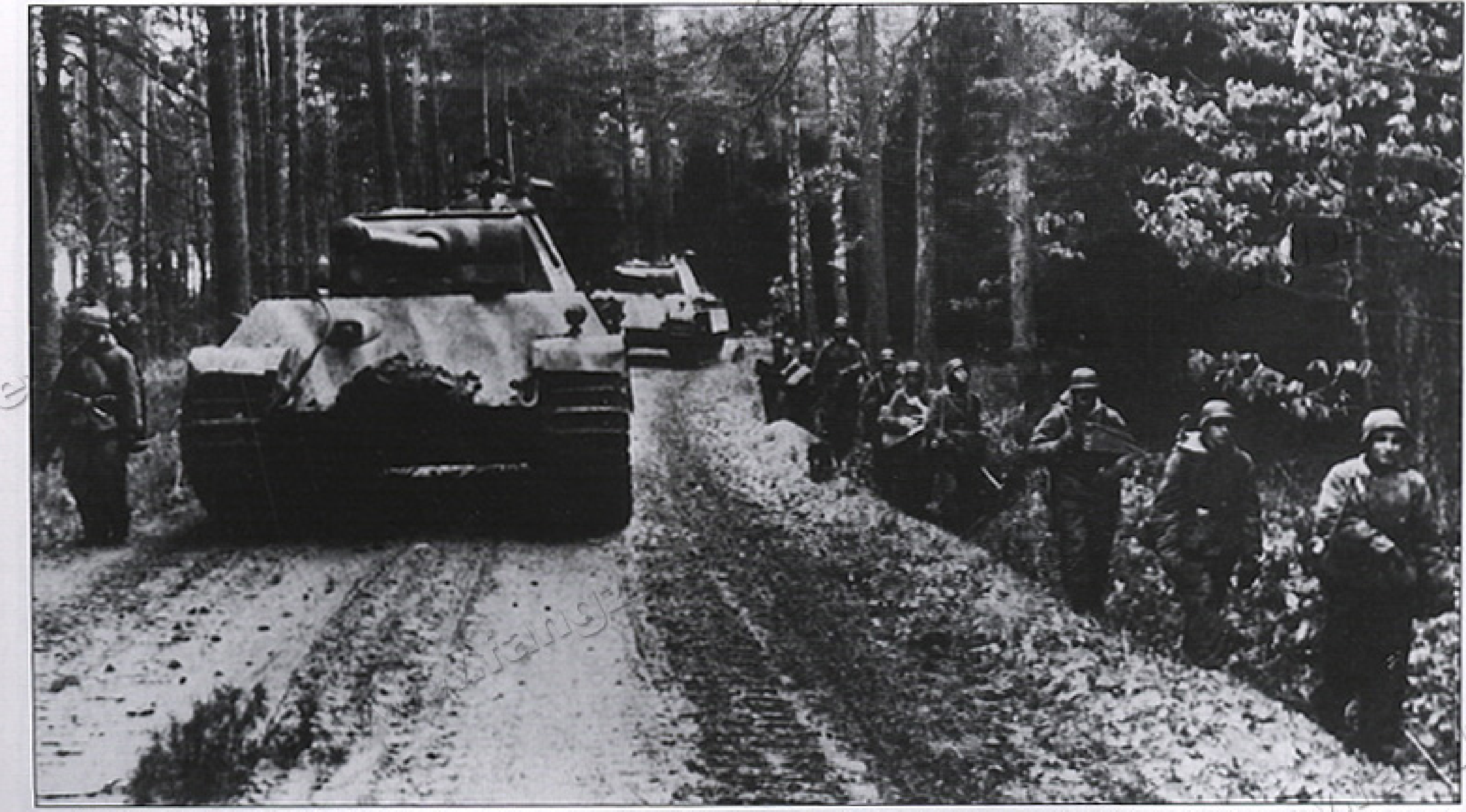
This Jäg.Pz. V "Jagdpanther" was knocked out of combat by the Polish 1st Armored Division at Langewes in Holland in late autumn of 1944. The vehicle burned up after it was hit in the side. The emblem painted on the right mudguard could be a German unit insignia. The Jäg.Pz. V was the best tank destroyer of its time due to its heavy weapon — the 8.8cm PAK 43 L/71 gun. It also benefited from very good armor protection that was designed in the Soviet style, which made this vehicle very similar to the tanks of the SU-122 family.



Death of a Panther! This early series Ausf. G model was abandoned by the Germans in the vicinity of Bologna, Italy in May 1945. The tank features additional armor protection on the turret roof consisting of two armor plates affixed a few centimeters above the turret and attached to the commander's cupola. It is possible that there was something between these two plates to make this additional armor stronger. This added protection is very similar to the modern concept of laminate armor.



This phototgraph shows Pz.Kpfw. V Ausf. G "Panthers" from LVI Pz.Kp., which was composed of 20. and 25.Pz.Gren.Div. and Pz.Div. "Müncheberg". They supported 9.Fallschirm Jäger-Division in the furious struggles on 13 March 1945 of two armies employing six regiments of tanks or self-propelled guns to capture the enemy bridgehead built by the Soviets in Kostren (now Kostrzyñ). The interesting camouflage scheme on these tanks consists of stripes of two new colors: dark red-brown (RAL 8012) and dark olive green (RAL 6003) over the standard dark yellow (RAL 7028) background. Both new colors were introduced in August 1944 along with new paint schemes that required that all armored vehicles be painted with large spots, with each color covering 33% of the vehicle's surface.



Another view of the Pz.Kpfw. V Ausf. G "Panthers" seen in the above photo. The fighting they were involved in lasted for almost one month, but all German counterattacks were repelled by the Soviets with heavy losses to the attacking troops. The camouflage pattern worn by the Panthers was quite common during the last months of the war and was applied in different divisions in similar forms. The scheme seen here is the same type of camouflage pattern seen earlier, but the stripes are painted in the opposite direction.